



Model Open Space Design / Natural Resource Protection Zoning

Provided here is a model Open Space Design (OSD) / Natural Resource Protection Zoning (NRPZ) bylaw/ordinance and companion subdivision and special permit language. This model bylaw/ordinance was adapted from the NRPZ bylaws of the Towns of Brewster, New Salem, Shutesbury, and Wendell as well as the Open Space Residential Design bylaw/ordinance this model replaces in the Commonwealth's Smart Growth/Smart Energy Toolkit. In the planning process, local officials are encouraged to work with legal counsel and to involve diverse stakeholders in the bylaw development process including developers, landowners, conservation groups, and their regional planning agency.

Because the Open Space Design model bylaw/ordinance deals specifically with subdivision of land and/or the site design process, communities will need to think carefully about existing provisions in the subdivision rules and regulations and any other local regulations (e.g., wetland protection bylaws, board of health regulations, etc.). As an innovative approach, Open Space Design may create conflicts with other dimensional regulations. Criteria for right-of-way and travel lane width, sidewalk specifications, utilities, finished grading, turning radii, and stormwater management are examples of site design elements that should be reviewed and modified as appropriate. The recent [Sustainable Neighborhoods Roadway Design Guidebook](#) issued jointly by the American Planning Association - Massachusetts Chapter and the Home Builders Association of Massachusetts is an excellent source of guidance on road related design elements.

The Commonwealth provides this model zoning to promote adoption by communities of bylaws/ordinances that require open space design (OSD). MassGIS data indicate that about 1.6 million acres of developable farm and forest land are zoned for conversion to residential development at lot sizes of one acre or more. Conventional development of these acres under current zoning and subdivision regulations would be environmentally, fiscally, and in other ways disastrous. Excessive habitat consumption, increased greenhouse gas emissions, unnecessary costs to build and maintain infrastructure, and diminished water quality and quantity are but a few of the negative impacts. Promoting Open Space Design, with its dramatically reduced environmental and fiscal impacts, advances the energy conservation and environmental stewardship objectives of the Patrick Administration while providing needed housing and treating landowners equitably.

Requiring OSD and making it the standard or by-right path to a development permit is important. Many Massachusetts communities – over 50% – already have cluster, open space residential design, conservation subdivision, or some other variant of cluster zoning. However, very few cluster subdivisions are built due in part to flaws in these bylaws/ordinances. For example, many communities require a special permit for a cluster subdivision, but not a conventional one. Other local bylaws have unreasonable minimum parcel requirements, complicated and time consuming procedures for determining allowable development rights, or other significant flaws. Placing OSD subdivision on even footing with conventional subdivisions should be a given. For those communities truly motivated to conserve their natural landscape guaranteeing permanent land protection through mandatory OSD (or transfer of development rights) is the way to go. A table enabling rapid assessment of cluster zoning bylaws for best practices is included as Appendix A.

Communities will, however, need to exercise care when requiring open space design. An important consideration for all communities implementing OSD is the relationship between the number of housing units produced under OSD and those units possible under the previous conventional zoning. Landowners have certain expectations based on the zoning in place. For example, a landowner with 20 acres zoned for a house lot on every acre would expect to be able to construct nearly 20 units after taking into account reductions due to the amount of land constrained by natural resources or topography or required for roads and other infrastructure. However, in some circumstances the yield under OSD can actually be higher than under conventional zoning due to the advantages afforded by the formulaic calculation of development rights, use of shared driveways, and reduced or eliminated dimensional requirements.

Regardless, landowner expectations have political ramifications and are important factors in considering where an OSD bylaw/ordinance is applied and how it is structured. Passing new zoning is a challenge to begin with, given the need for a two-thirds vote. Proposing OSD zoning that has the potential (real or perceived) to affect the financial wherewithal of a large numbers of landowners compounds the difficulty, as town meeting or city council tends (justifiably) to be very sensitive to fiscal impacts. Affected landowners will likely raise questions about fairness and raise the specter of takings, substantive due process, or other constitutional challenges. While the Executive Office of Energy and Environmental Affairs believes that these claims would be very difficult to substantiate legally, politically it can be the death-knell of a zoning proposal if the community is not prepared. Thus, it is important to be aware of the fiscal impacts of OSD zoning (essentially the ratio of housing units or the square footage of commercial or industrial space possible under the previous zoning to that which will result under OSD) when formulating an OSD bylaw/ordinance.

In those municipalities lacking public sewer and water systems supportive board of health policies and regulations will be particularly important to ensuring equity. While reductions in yield or return on investment resulting from properly justified zoning changes are legal unless they deprive the property owner of virtually all value, a significant drop in the net worth of property will likely be perceived as unfair by town meeting voters or city council. However, it is also important to recognize that this form of zoning does offer offsets to possible reductions in unit count, including prompt and predictable permitting, greater design flexibility, more diverse housing, and attractive features such as density bonuses, shared driveways, transfers of development rights, and the ability of the owner to retain possession of the preserved open land. Careful advance work, education, and compatible board of health and other local regulations can help a community avoid or overcome these potential political pitfalls. Thus far, the four NRPZ/OSD bylaws in place have passed by overwhelming margins at each town meeting.

Equity concerns aside, Open Space Design could allow more units than the prior zoning, or less. Mindful of the obligation to provide affordable housing and the benefits of a diverse housing stock a community can reduce the unit count or total buildout. Reduced yield is very appropriate for some communities. Many small, rural, and natural resource rich communities are presently zoned for far more growth than is reasonable. In a rural town with existing densities of 20-30 acres per dwelling unit, zoning for a dwelling unit on every acre could be considered excessively dense and a low-density version of OSD more appropriate. For example, zoning in the Berkshire County community of Egremont, which presently has about 600 housing units, prescribes construction of more than 5,000 additional units. Communities in this circumstance should work with landowners and other stakeholders to rationalize yield consistent with a balanced approach to resource protection and future housing needs.

Even when application of the OSD bylaw itself results in a comparable number of units to that possible under the previous zoning it is very important to examine other rules and regulations to see how they will impact unit count. Of primary concern are wastewater disposal regulations in communities lacking sewer and/or water infrastructure. If wastewater disposal precludes the construction of a high percentage of the lots the OSD zoning allows this can be problematic.

Under state regulations conventional subdivision lot sizes of one acre can generally accommodate an on-site well and septic system without significant loss of yield. This of course can vary if a local board of health enforces stricter regulations. However, as OSD reduces lot size by 50% or more applying the technique to districts where lot sizes were previously one acre or smaller becomes challenging. Landowners and developers may complain, and have a reasonable case, in the event that a community requires OSD for districts where lot sizes fall below that possible for well/septic if the community fails to provide relief. A potential route out of this problem is to offer OSD as an alternative rather than a mandate; the obvious problem being that few projects are likely to take advantage of the OSD zoning. Communities can equitably require OSD and insist on conservation of a high percentage of the parcel when preexisting zoning allows one acre or smaller lots by aligning their board of health regulations and policies. For example, making it clear to landowners/developers that the community will approve aggregate calculations (where the protected open space is counted along with the individual lots toward the area needed to support a septic system under Title V) and shared septic systems, or reduce the amount of required open space to accommodate underground wastewater disposal facilities, will help the community to conserve as much land as possible while providing a reasonable outcome to property owners.

An example of ways to reconcile a small lot size requirement and on-site wastewater disposal water is warranted. Again, recognizing that a one acre lot is the minimum necessary to site a four bedroom home using a conventional well and septic system, assuming a previous one acre lot size requirement, and that water and sewer are not available, a landowner is likely to experience a drop in yield if 60% of the developable land must be conserved. When zoning is already at the minimum for a conventional on-site well and septic system, and OSD requires lot sizes to drop, in this case to below ½ acre, either the number of bedrooms or the number of homes has to decrease or the means of supplying water or treating wastewater has to change. If conventional well and septic are used either the number of 4 bedroom homes would have to drop (to a maximum of 10) or a larger number of 3 bedroom homes would have to be constructed instead (to a maximum of 13). The landowner could increase yield by constructing a shared well, but this would require a permit from DEP and ongoing monitoring. Should the community facilitate an aggregate nitrogen loading calculation (described above) approximately the full unit count allowed under the prior zoning may be realized. Similarly, if the community readily approves a shared septic system this would permit the landowner to construct the full unit count and reduce equity concerns for those projects under 22 four bedroom units (88 bedrooms produce the maximum amount of flow allowed under Title V).

If a community has water and sewer applying OSD throughout the served area makes tremendous sense. In fact, it is quite wasteful of land, natural resources, and money to do otherwise. Sewered large lots don't make environmental or fiscal sense. However, communities with water and sewer to support growth will need to think about a practical top end. In city and town centers, transit stops, and other suitable locations once sufficient land is set aside for parks, greenways, and the like it probably makes more sense to develop the entire parcel with mixed-uses at relatively high density than to require or encourage residential only OSD. In these locations growth contributes to the vitality of the community and has many other environmental and fiscal benefits. It also provides needed homes and businesses in a location and form that makes sense. To the extent additional density in such a district is feasible this type of location also represents a potential receiving area for growth moved from a sensitive location via a transfer of development rights bylaw/ordinance.

The Executive Office of Energy and Environmental Affairs believes that this model bylaw/ordinance conforms to the 2008 Wall Street Development Corporation v. Planning Board of Westwood decision. In its decision the Appeals Court found that Westwood's Major Residential Development bylaw ran afoul of the Subdivision Control Law by making subdivision approval subject to a discretionary special permit. This was found to be impermissible under state law because subdivision approval must be a matter of right.

Purpose and Intent:

The primary purposes for this [bylaw/ordinance] are to:

1. Further the goals and policies of the [CITY/TOWN] Master and Open Space and Recreation Plans;
2. Provide for the by-right construction of Open Space Design (OSD);
3. Encourage the permanent preservation of open space, agricultural land, forestry land, wildlife habitat, other natural resources including aquifers, water bodies and wetlands, and historical and archaeological resources;
4. Enable landowners to realize equity from development of a small percentage of their land while current uses continue on the majority of the property;
5. Expedite the permitting of projects;
6. Encourage a less sprawling and more efficient form of development that consumes less open land and conforms to existing topography and natural features;
7. Facilitate the construction and maintenance of housing, streets, utilities, and public services in a more economical and efficient manner.
8. Reduce energy consumption and greenhouse gas emissions;
9. Minimize the total amount of disturbance on the site; and
10. Promote the incorporation of Low Impact Development and Green Infrastructure into development designs.

Municipalities should customize the purpose and intent statement to suit their physical and cultural resources and motivation for implementing the bylaw/ordinance. In addition to the above, other potential purposes include provision of design flexibility, construction of a more diverse housing supply, protection of large blocks of un-fragmented habitat, and prevention of roadside development.

Open Space Design is most often used to address residential subdivision. However, OSD can also be applied to commercial or mixed-use projects. In fact, doing so can help to achieve positive development outcomes that are not possible with solely residential growth, such as easier access to goods, services, and jobs that reduces car travel and has other benefits.

Definitions:

“Homeowners Association” shall mean the corporation, trust, or association owned by the unit owners within an Open Space Design and used by them to manage and regulate their affairs, including any commonly owned land or facilities.

“Open Space Design” shall mean a process for the development of land that: (a) calculates the amount of development allowed up-front by formula; (b) requires a Conservation Analysis to identify the significant natural, cultural, and historic features of the land; (c) concentrates development, through design flexibility and reduced dimensional requirements, in order to preserve those features; and (d) permanently preserves at least [sixty] percent of the land in a natural, scenic or open condition or in agricultural, farming or forest use.

Alternative: [50-90%]

The percentage of land permanently conserved should correspond to that required by the community in the Open Space section of this zoning.

Applicability:

- A. Open Space Design is allowed by right under zoning, subject only to the requirements of the subdivision regulations or site plan review as applicable and any other generally applicable non-zoning land use regulations, and may be proposed anywhere in [CITY/TOWN]. Within the [list designated districts] [all single family housing developments (including residential subdivisions or residential developments where the property is held in condominium, cooperative ownership, or other form where the property is not subdivided)] and within [Districts as designated by the CITY/TOWN] [all housing developments] shall comply with the Open Space Design provisions of this section, unless the planning board allows a development that deviates from the requirements of this section by Special Permit. Such deviations may be approved if the applicant demonstrates that the proposed alternative development configuration provides adequate protection of the site's environmental resources and fulfills the purposes of this Section as well as or better than an Open Space Design.

If excessive land is being consumed OSD should be applied regardless of housing type. Also, allowing units to take the form of duplexes, townhouses, or multi-family structures produces greater housing diversity and affordability and enables the preservation of more land.

Alternative: all residential and commercial developments

OSD bylaws can also apply to non-residential development. However, since in the vast majority of cases OSD will be used to solely to regulate residential development, the model has been drafted as such. Those communities applying OSD to non-residential uses will need to make appropriate changes to the Applicability, General Requirements, Dimensional Requirements, and other sections of this model. While making these modifications will require careful consideration, applying OSD to non-residential uses is perfectly feasible within the framework of this model. For example, a floor area yield for commercial or mixed use can be calculated by formula just as readily as residential development.

A primary benefit of OSD is permanent preservation of open space at no cost to the municipality while providing housing and ensuring an adequate return for the landowner. Thus, OSD is most often applied where the principal land use goal is to retain land in its undisturbed state and significant natural resources are present that warrant conservation. It also has many other benefits including reduced costs of construction and maintenance of roads and utilities and reduction in impervious surfaces and stormwater runoff. Water supply protection, preservation of agricultural land, protection of wildlife habitat, conservation of greenway corridors, and retention of forest cover in order to support timber production and tourism are but a few of the motivations to use OSD to preserve open space. However, unless lot sizes are small enough it makes little sense to require conventional subdivisions that consume more land and natural resources than necessary. Therefore, even if land does not contain special or unique natural resources it is a good idea to make OSD the default standard. On the other hand, when an area is already largely developed or is highly suited for growth due to a lack of natural resources and the presence of infrastructure then it likely makes more sense to preserve just enough land for parks and trails for active recreation and to develop the balance as efficiently as is politically or practically feasible.

Note that existing zoning in rural areas often calls for much more development than is rational or desirable. Communities should not feel that they must accommodate all the units that were possible under the zoning that preceded OSD. The by-right nature of OSD, reduced development costs, greater design flexibility, and other benefits help ensure that landowner expectations are met.

As an alternative, Open Space Designs need not be done on a strictly parcel by parcel basis. It is feasible, if politically and practically more complicated, to use non-contiguous parcels for an OSD development. This would be a simpler approach to transfer of development rights (a technique which is covered in detail in the Smart Growth/Smart Energy Toolkit at http://www.mass.gov/envir/smart_growth_toolkit/index.html.)

By way of illustration, if a parcel of land near town is less desirable as open space and a parcel away from town is great open space, why have even an Open Space Design project on the highly desirable piece and less than the desired density on the parcel closer to town? This is especially true since the parcel close to town is more likely to have water and/or sewer service, and it will be closer to schools, libraries, police stations, and other services. If considered as a whole the development area could be the in-town parcel and the conservation area the more rural parcel.

- B. Subsection A above does not apply to construction of homes on individual lots that existed prior to [date of the first publication of notice of the public hearing on the adoption of this section] or to lots created through the “Approval Not Required” (ANR) process with frontage on existing ways that meet the standard specified in the [CITY/TOWN] Subdivision Regulations. However, if subdivision approval is not required an applicant may nevertheless voluntarily apply for an Open Space Design under this section. In such a case, prior to lot creation via the ANR process the application shall be subject to site plan review as described in [cite relevant section of CITY/TOWN zoning].

Alternative: Communities concerned that development of existing lots or of new lots created through the “Approval Not Required” process may defeat their intent in adopting OSD zoning may wish to also adopt language such as that found below limiting the rate of development of such lots. This language, similar to that in place in the town of Wendell, provides landowners and developers a strong incentive to develop under the Open Space Design bylaw/ordinance.

Residential Uses – Except for Open Space Designs under [cite relevant section of CITY/TOWN zoning] of the Zoning Bylaw/Ordinance new primary dwellings are allowed, subject to all other provisions of these [bylaws/ordinances], at the rate of no greater than one new primary dwelling unit in any seven year period either: 1) on a buildable lot in existence on [date of adoption of the OSD bylaw/ordinance] or 2) a new buildable lot divided from a lot in existence on [date of adoption of the OSD bylaw/ordinance].

- C. If the proposed Open Space Design involves [one or more shared driveways, density bonuses, transfer of development rights, and/or any other use that requires a special permit, or site plan review for lot configuration or any other purpose], the proceedings for all such special permits and the Site Plan review shall occur in one consolidated special permit proceeding before the planning board.

Alternative: If a project requires a permit from two different permit granting authorities, the Planning Board, Board of Appeals, or Special Permit Granting Authority may request that a joint public hearing be held and shall conduct reviews simultaneously, to the extent possible.

In the case of an Open Space Design the language of sub-section C above transfers permitting authority to the Planning Board. This may not be palatable to all communities. The alternate language provided here would serve to expedite permitting without transferring authority.

Yield: Allowable Residential Units

The base maximum number of residential units in an Open Space Design is calculated by a formula based upon the net acreage of the property. This formula takes into account site-specific development limitations that make some land less suitable for development than other land. This calculation involves two steps, calculating the net acreage and dividing by the allowed density.

OSD bylaws can also apply to non-residential development. However, since in the vast majority of cases OSD will be used to solely to regulate residential development, the model has been drafted as such. Those communities applying OSD to non-residential uses will need to make appropriate changes to the Applicability, General Requirements, Dimensional Requirements, and other sections of this model. While making these modifications will require careful consideration, applying OSD to non-residential uses is perfectly feasible within the framework of this model. For example, a floor area yield for commercial or mixed use can be calculated by formula just as readily as the number of dwelling units in a residential development.

Net Acreage Calculation

The factors named below are included for net acreage calculation purposes only and do not convey or imply any regulatory constraints on development siting that are not contained in other applicable provisions of law, including this zoning bylaw. To determine net acreage, subtract the following from the total (gross) acreage of the site:

Alternatives: In regard to wetlands delineation municipalities may wish to enable several alternatives including peer review under the aegis of the Planning Board and utilization of geographic information systems data available from the Massachusetts Department of Environmental Protection and MassGIS office.

Communities should carefully consider subtractions from the gross acreage of the site. Particular attention should be paid to the 100-year floodplain and wetlands provisions of subsection C due to the variability of local bylaws/ordinances regarding these items. Municipalities desiring to do so can keep the number of units resulting from OSD comparable to that of a conventional subdivision by accounting for reductions in yield that result from local wetlands bylaws/ordinances.

An important consideration in regard to the net acreage calculation is simplicity. This model utilizes a formula and suggested “weighting” that should realize a yield comparable to that resulting from the much more complicated, costly, uncertain, and time-consuming process of producing a yield plan. Municipalities are encouraged to use a formula in order to ease the administrative burden and time and cost of reaching a decision and to customize yield reductions and their weight in order to achieve an outcome that meets local objectives and provides equity for landowners.

Finally, wastewater treatment, often a factor in yield calculations, is not addressed within the net acreage calculation (or elsewhere within this model zoning). In the event on-site wastewater disposal is required the yield allowed under zoning may subsequently be reduced as the open space design is permitted by the board of health. Compatibility between zoning and wastewater disposal regulations, important to the success of OSD, is discussed in the wastewater disposal box of this model zoning.

- A. [Half] of the acreage of land with slopes of [20%] or greater;
- B. [The total acreage] of land subject to easements or restrictions prohibiting development, lakes, ponds, vernal pools, 100-year floodplains as most recently delineated by FEMA, Zone I and A around public water supplies, and all wetlands as defined in Chapter 131, Section 40 of the General Laws and any state or local regulations adopted there under, as delineated by an accredited wetlands specialist and approved by the Conservation Commission; and
- C. [Ten] percent of the remaining site acreage after the areas of A and B are removed to account for subdivision roads and infrastructure.

Unit Count Calculation

The base maximum number of allowable residential dwelling units on the site is determined by dividing the net acreage by the required acreage (allowed density) for a dwelling unit in the district under this [bylaw/ordinance]. Fractional units of less than .5 shall be rounded down and .5 or more shall be rounded up. The required acreage for each district is:

<u>District</u>	<u>Required Acreage per Unit</u>

List in the table each district where OSD is possible and the required minimum acreage per unit in that district. Note that OSD may be compulsory in some districts and optional in others. Also, the necessary acreage (allowed density) need not be that previously required in the district.

Lots in More than One District

For lots in more than one district, the allowable unit count (excluding bonuses) and required open space for each district shall be computed separately first. These totals shall be added together and then rounded as above. The allowable maximum bonus for the entire development shall be calculated based upon this combined total number of units. The permitted location of the units and protected open space shall be wherever the planning board determines best fits the characteristics of the land, based upon the Conservation Analysis and Findings.

General Requirements:

1. **Housing Types.** Housing units within [Districts as designated by the CITY/TOWN] shall be single-family structures. Within [Districts as designated by the CITY/TOWN] all housing types allowed under the [CITY/TOWN] [bylaw/ordinance] are permitted.

The model is drafted in this manner to allow communities to designate certain districts for single family only open space designs (the most common application of OSD) and others for all housing types allowed in the community (which helps to further advance the objectives of OSD). Many variations are possible to accommodate local objectives.

Local officials will need to ensure that allowed housing types are consistent with the objectives of the local master plan. Because of the ease of siting, allowing two-family or multi-family structures facilitates the preservation of more than the minimum required open space. It would also enable the community to produce a more diverse and affordable housing supply. Communities may wish to modify the allowed housing types by district. This can be done in a manner that offers an incentive to build OSD if it is not obligatory within a district.

Accessory Dwelling Units: *Communities may wish to allow accessory units within an OSD in order to provide a more diverse and affordable housing supply. This particularly makes sense if they are already allowed in districts where this bylaw/ordinance will apply. In doing so, communities should carefully define accessory apartment. Typically an accessory unit is self-contained, limited to a relatively small size, (500-900 square feet), and located on the lot of or within an owner occupied single-family home. Lack of care to the definition can lead to unintended permitting of multi-family housing with larger impacts. Guidance can be found in the Accessory Apartments Toolkit module at http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-adu.html.*

Municipalities electing to authorize accessory units should add the following language to the end of the Housing Types section. Municipalities should also be aware that authorizing accessory units will likely necessitate further changes to the OSD zoning bylaw/ordinance and other local regulations to ensure that parking, waste water disposal, access, and other standards are compatible.

Alternative: Accessory apartments are permitted in Open Space Designs and do not count toward the total number of allowable dwelling units. Accessory apartments within an OSD shall comply with the accessory apartment requirements of the [CITY/TOWN] [bylaw/ordinance] except that [insert a list of conflicting & non-applicable requirements from the community's current accessory apartment standards such as lot areas, frontages, or setbacks] shall not apply.

2. Parking. Each unit shall be served by [two] off-street parking spaces.

As drafted the model requires two spaces per unit and is intentionally silent about location beyond requiring the spots to be off-street. This allows flexibility for parking to be provided on a driveway, in a garage, in a common parking lot, etc. Communities will want to be very thoughtful in regard to the amount and type of parking that they require. Too much parking is wasteful of space and impacts natural resources. A great deal of information on smart parking is available in the Smart Growth/Smart Energy Toolkit Module by the same name found at http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-smart-parking.htm and the smart parking model bylaw/ordinance found at http://www.mass.gov/envir/smart_growth_toolkit/bylaws/SP-Bylaw.pdf. Ultimately, Communities should customize the amount and location of required parking to suit their individual circumstances, remembering the benefits of requiring less and allowing flexibility.

Alternative: Each unit shall be served by [two] off-street parking spaces except that for one bedroom and studio units AND structures containing four or more units, the applicant shall provide [one and a half] parking spaces per unit. Calculations for parking spaces in these developments shall be rounded up to the nearest integer where necessary.

This version decreases parking requirements for larger scale high-density housing under the assumption that many of the people who live in one-bedroom condominiums or other multi-family housing will require only one parking space. These condominium situations generally involve a condominium association that can manage and assign any residual spaces that exist.

Dimensional Requirements:

Lot size and shape, unit placement, and other dimensional requirements within an Open Space Design are subject to the following limitations:

Objectives: Lots/units shall be located and arranged to advance the resource conservation objectives of the master and open space and recreation plans and to protect: views from roads and other publicly accessible points; farmland; wildlife habitat; large intact forest areas; hilltops; ponds; steep slopes; and other sensitive environmental resources.

Monumentation: Industry accepted monumentation of a type consistent with the use of the open space shall clearly delineate the boundaries of the protected open space in manner that facilitates monitoring and enforcement.

Area: There is no required minimum lot size for zoning purposes. The limiting factor on lot size in Open Space Design is typically the need for adequate water supply and sewage disposal. This does not affect the ability of the Board of Health to require area on a lot for water supply protection and the disposal of wastewater.

The total number of units is set through the yield calculation. Letting the developer vary lot sizes and place the units on the parcel subject to the conservation requirement of the Open Space Design as well as subdivision, health, and other applicable regulations allows the flexibility necessary to maximize resource conservation. Communities will want to carefully consider wastewater disposal regulations and policies as they can have a big impact on the successful implementation of OSD. See the introductory and wastewater disposal comment boxes for further discussion.

Alternative: Lots within an Open Space Design shall be at least [5,000] square feet in area.

Communities that feel the need to specify a lot size in zoning should select one that meets their needs. A lot size of 5,000 square feet (an eighth of an acre) is common in many urban and first-tier suburban communities, allowing for a small private yard and in the case of an Open Space Design subdivision an abundance of shared open space.

Frontage: There is no numerical requirement for road frontage in an Open Space Design. Each lot must have legally and practically adequate vehicular access to a public way or a way approved under the subdivision regulations either directly across its own frontage or via a shared driveway approved by special permit.

This language is intended to allow maximum flexibility so that housing units can be accommodated in a manner that maximizes resource conservation. At the same time, the requirement for legal and practical access follows a long line of precedent setting court cases and ensures adequate access for fire protection and provision of services.

Alternative: Lots within an Open Space Design shall have at least [50] feet of road frontage.

Communities that feel the need to specify a frontage requirement should select one that meets their needs. The Commonwealth suggests 50 feet as this works well with a 5,000 square foot (an eighth of an acre) area standard, producing lots that are 50 feet wide by 100 feet deep.

Setbacks: The minimum setback for any building from a property line shall be [10] feet. In no event shall principal structures (whether single-family, multi-family, or any other principal use) be closer than [20] feet to each other.

The recommended area, frontage, and setback standards offer the applicant and the Planning Board flexibility, typically exercised during subdivision review, to achieve a design that best conserves natural and cultural resources. The ten foot setback affords some distance between homes in the open space design and structures on abutting properties, and allows for on-property vehicular access around the perimeter of a building. Within the open space design each structure can contain units in any configuration - town or row houses, duplexes, triple-deckers, etc-allowed under the Housing Types section of this bylaw/ordinance. In some instances communities may wish to vary the setback requirement by zoning district.

Open Space Requirements:

Minimum: A minimum of [60%] of the land area of the OSD shall be set aside as permanently conserved open space. A greater percentage may be set aside voluntarily or in exchange for additional housing units as authorized by a planning board approved special permit. The minimum percentage of required open space may be reduced by no more than [10%] provided the full required minimum open space is mapped and the land that would otherwise be permanently conserved is shown. This land shall be subject instead to a Restrictive Covenant under G.L. Chapter 184, Sections 26-30, which shall be approved by the planning board and [City Council or Board of Selectmen/Town Counsel] and enforceable by the [CITY/TOWN]. Said land may be utilized for common water supply wells and associated infrastructure, common subsurface leaching fields and other underground components of wastewater systems, and rain gardens, constructed wetlands, and other decentralized stormwater management systems consistent with Low Impact Development (LID) that serve the Open Space Design. Treated stormwater may be discharged into the protected open space or land subject to a restrictive covenant. All protected land must be shown on approved plans.

Alternative: [50-90%]

Fifty percent is generally accepted as the minimum for Open Space Designs and similar zoning measures. Based on local circumstances - such as the nature of the natural resources to be conserved and the amount/pattern of existing development - communities should consider a range of [50-90%]. A percentage at the higher end of the range is often warranted to protect particularly sensitive natural resources or attain a prominent local conservation objective. The amount of open space applicants are required to protect can be varied by zoning district, as is done for required square footage per unit in the Unit Count Calculation section of this model zoning.

The best open space designs are the result of advance planning and prescriptive preservation and design requirements. Communities may wish be quite specific as to how the Open Space Design section best advances the goals of the master or open space plan. An example would be referring to specific geographic areas (or maps of land targeted for conservation) or natural resources the community desires to preserve. Carefully implemented, a series of Open Space Designs that follow these plans can conserve contiguous blocks of open space and trail corridors. A lot of resources are available to assist in the selection of conservation priorities including regional policy plans drafted by the 13 regional planning agencies and natural resource mapping (such as BioMap2) available from the MassGIS office at <http://www.mass.gov/mgis/laylist.htm>.

It will be a challenge for some OSD projects, particularly those where a high percentage of the land must be conserved, to accommodate infrastructure serving the project within the developed portion of the site. In order to facilitate construction of OSD projects communities can reduce by up to 10% the otherwise required amount of open space to accommodate LID stormwater, water, and wastewater infrastructure. Communities should evaluate how constrained their developable land is and how difficult it will be for project proponents to realize full dwelling unit count when deciding whether to do so. The terms of ownership and maintenance of these areas would need to be addressed during subdivision review.

The rationale behind reducing the required amount of open space for the listed infrastructure, rather than allowing this infrastructure within the protected open space, is that conservation commissions may be reluctant to own open space that has an easement for wastewater disposal or another purpose listed above. Also, non-profit conservation organizations may be reluctant to hold a restriction on properties with these facilities due to potential enforcement implications. Finally, approval under by the Secretary of EEA under Chapter 184 may be jeopardized. Instead, the land area devoted to water, LID, or wastewater infrastructure must be subject to a simple deed restriction (shared permanent easement) dedicating that area to shared use.

Contiguity of Open Space: Preserved open space shall be contiguous to the greatest extent practicable. Where noncontiguous pockets of open space are preferable to protect conservation areas, applicants shall attempt to connect these resources area to the greatest extent practicable through the use of trails and/or vegetated corridors. Open Space will still be considered contiguous if it is separated by a shared driveway, roadway, or an accessory amenity (such as a barn, paved pathway or trail, or shed for the storage of recreational equipment).

In addition to implementing contiguity requirements to protect large blocks of open space, corridors between open space blocks should be preserved in order to allow for wildlife movement. Designating desired blocks and corridors in open space and recreation or other plans allows developers and regulators to incorporate them from the outset.

Permanent Conservation of the Required Open Space: Any land required to be set aside as open space, voluntarily preserved in excess of that required, conserved as a condition of site plan approval, or protected in exchange for additional density pursuant to a special permit, shall be permanently protected pursuant to Article 97 of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts or a perpetual restriction under G.L. Chapter 184 Section 31-33. Unless conveyed to the [CITY/TOWN of NAME] Conservation Commission, the required open space shall be subject to a permanent Conservation, Watershed, or Agricultural Preservation Restriction conforming to the standards of the Massachusetts Executive Office of Environmental Affairs, Division of Conservation Services, or Department of Agricultural Resources in accordance with G.L. Chapter. 184 Section 31-33, approved by the planning board and [City Council or Board of Selectmen/Town Council] and held by [INSERT CITY/TOWN NAME], the Commonwealth of Massachusetts, or a non-profit conservation organization qualified to hold conservation restrictions under G.L. Chapter 184, Section 31-33. Any proposed open space that does not qualify for inclusion in a Conservation Restriction, Watershed, or Agricultural Preservation Restriction or that is rejected from inclusion in these programs by the Commonwealth of Massachusetts shall be subject to a Restrictive Covenant in perpetuity under G.L. Chapter 184, Sections 26-30, which shall be approved by the planning board and [City Council or Board of Selectmen/Town Council] and held by or for the benefit of the [CITY/TOWN].

The restriction shall specify the prohibited and permitted uses of the restricted land, which would otherwise constitute impermissible development or use of the open space, consistent with the Allowable and Prohibited Uses subsections of this [bylaw/ordinance] and any permits. The restriction may permit, but the planning board may not require, public access or access by residents of the development to the protected land.

Planning Boards should weigh the benefits of public access against potential detriment to the conservation values of the open space.

Timing: Any restriction or other legal document necessary to permanently conserve open space as required herein shall be recorded before lots are released or building permits are issued, whichever comes first.

Allowable Use of the Open Space: Such land shall be perpetually kept in an open state, preserved exclusively for the purposes set forth herein and in the deed and/or in the restriction, and maintained in a manner which will ensure its suitability for its intended purposes. Proposed use(s) of the open space consistent with this section shall be specified in the application.

- a. The open space shall be used for wildlife habitat and conservation and the following additional purposes: historic preservation, outdoor education, passive recreation, aquifer protection, agriculture, horticulture, forestry, or a combination of these uses, and shall be served by suitable access for such purposes.

Alternative: Active Recreation: Where appropriate to the topography and natural features of the site up to [10%] of the open space may be altered and used for active recreation (e.g. ball fields) or community gardens;

Ball fields and other active recreational uses of conserved open space can be appropriate, particularly in more urban communities. However, limiting the percentage of the open space that can be devoted to such uses keeps the bulk of the land in its natural state.

Alternative: Motorized Recreation: The use of [motorized vehicles] [snowmobiles] is permitted within protected open space only on trails in non-sensitive areas approved as part of the open space design.

Municipalities should recognize that active and especially motorized uses could easily destroy the natural resource value of the conserved open space, that conservation commissions are not authorized to hold land used for these purposes, that conservation organization may be reluctant to hold restrictions on open space where these uses are allowed, and that these uses make approval of a restriction by EEA pursuant to Chapter 184 unlikely.

- b. The planning board may permit a small portion of the open space, not to exceed [5%], to be paved or built upon (preferably using permeable pavement and other means of retaining natural hydrology) for structures accessory to the dedicated use or uses of such open space (i.e. barns or other farm structures, parking to facilitate public access for passive recreation, informational kiosks, pedestrian walks, ADA access, and bike paths) so long as the conservation values of the open space are not compromised.
- c. The open space may be used as the land subject to a restriction for the purpose of an aggregate calculation under Title V.

Prohibited Use of the Open Space: The open space within an OSD shall be perpetually kept in an open state, preserved exclusively for the purposes set forth in the Allowed Uses section of this [bylaw/ordinance], and maintained in a manner that will ensure its suitability for its intended purposes. The following uses are expressly prohibited except in conformance with an allowed use:

- a. Constructing or placing of any temporary or permanent building, tennis court, landing strip, mobile home, swimming pool, fences, asphalt or concrete pavement, sign, billboard or other advertising display, antenna, utility pole, tower, conduit, line or other temporary or permanent structure or facility on, above, or under the open space that is not in conformance with an authorized use of the open space (e.g. a barn or other structure associated with agriculture);
- b. Mining, excavating, dredging, or removing soil, loam, peat, rock, gravel or other mineral resource or natural deposit;
- c. Placing, filling, storing, or dumping of soil, refuse, trash, vehicles or parts thereof, rubbish, debris, junk, waste, or other substance or material whatsoever or the installation of underground storage tanks;

- d. Cutting, removing, or destroying of trees, grasses or other vegetation unless in conformance with an authorized use such as agriculture, forestry, or recreation;
- e. Subdivision; neither further division of the protected open space into lots or the use of the protected open space toward any further building requirements on this or any other lot is permitted;
- f. Activities detrimental to drainage, flood control, water conservation, water quality, erosion, soil conservation, or archeological conservation;
- g. Purposefully introducing or allowing the introduction of species of plants and animals recognized by the Executive Office of Energy and Environmental Affairs to pose a substantial risk of being invasive or otherwise detrimental to the native plant and animal species and plant communities on the property;
- h. The use, parking or storage of motorized vehicles, including all-terrain vehicles (ATVs), motorcycles, and campers, except in conformance with an authorized use of the open space or as required by the police, firefighters, or other governmental agents in carrying out their duties; and

Communities for whom the use of snowmobiles and other motor vehicles is consistent with their open space objectives should:

- *Edit Prohibited Use subsection h as appropriate;*
- *Add the Motorized Recreation subsection to the Allowed Use of Open Space section;*
- *Recognize and take precautions to prevent such use from destroying the natural resource value of the conserved open space;*
- *Place conditions upon vehicular use (e.g. restricting vehicles to established trails in non-sensitive areas);*
- *Be aware that conservation commissions are not authorized to hold land used for these purposes; and*
- *Understand that EEA approval, which is required to make a restriction permanent pursuant to G.L. Chapter 184, is unlikely when motor vehicle use is allowed.*

- i. Any other use or activity which would materially impair conservation interests unless necessary in an emergency for the protection of those interests.

Ownership of the Open Space: At the applicant’s discretion the open space may be owned by:

- (1) A private owner for agricultural, horticultural, forestry or any other purpose not inconsistent with the conservation restriction;
- (2) A non-profit organization or agency of the Commonwealth, with their consent, whose principal purpose is the conservation of open space for any of the purposes set forth herein;
- (3) The [CITY/TOWN] Conservation Commission; or

(4) A homeowners association (HOA) as defined in herein owned jointly or in common by the owners of lots or units within the project. If option four is selected the following shall apply:

- a. The documents organizing the HOA shall be drafted and approved by the planning board before final approval of the OSD development, recorded prior to the issuance of building permits, comply with all applicable provisions of state law, and pass with conveyance of the lots or units in perpetuity. Each individual deed, and the deed, trust, or articles of incorporation, shall include language designed to effect these provisions.
- b. Membership must be mandatory for each property owner, who must be required by recorded covenants and restrictions to pay fees to the HOA for taxes, insurance, and maintenance of common open space, private roads, and other common facilities.
- c. The HOA must be responsible in perpetuity for liability insurance, property taxes, the maintenance of recreational and other facilities, private roads, and any shared driveways.
- d. Property owners must pay their pro rata share of the costs in subsection c above, and the assessment levied by the HOA must be able to become a lien upon individual properties within the OSD.
- e. The HOA must be able to adjust the assessment to meet changed needs.
- f. The applicant shall make a conditional grant to the [CITY/TOWN], binding upon the HOA, of the fee interest to all open space to be conveyed to the HOA. Such offer may be accepted by the [CITY/TOWN], at the discretion of the [City Council/Board of Selectmen], upon the failure of the HOA to take title to the open space from the applicant or other current owner, upon dissolution of the association at any future time, or upon failure of the HOA to fulfill its maintenance obligations hereunder or to pay its real property taxes.

A conditional grant offer is a legal contract that a CITY/TOWN can invoke to take title to the open space in an OSD should an HOA fail to fulfill its responsibilities relative to the open space. The exact terms (the conditions) of the grant should include at least those in section f above.

- g. Ownership shall be structured in such a manner that real property taxing authorities may satisfy property tax claims against the open space lands by proceeding against individual property owners in the HOA and the dwelling units they each own.
- h. [CITY/TOWN] Counsel must find that the HOA documents presented satisfy the conditions in Subsections a through g above, and such other conditions as the planning board shall deem necessary.

Selection of ownership option one, two, or four requires:

- a) The conveyance of a conservation restriction as outlined herein; and
- b) The granting of an access easement over such land sufficient to ensure its perpetual maintenance as agricultural, conservation, or recreation land. Such easement shall provide that in the event the trust or other owner fails to maintain the open space in reasonable condition, the [CITY/TOWN] may, after notice to the lot owners and public hearing, enter upon such land to maintain it in order to prevent or abate a

nuisance. The cost of such maintenance by the [CITY/TOWN] shall be assessed against the properties within the development and/or to the owner of the open space. Pursuant to G.L. Chapter 40 Section 58 the [CITY/TOWN] may file a lien against the lot or lots to ensure payment for such maintenance. Pursuant to G.L. Chapter 40 Section 57 the [CITY/TOWN] may also deny any application for, or revoke or suspend a building permit or any local license or permit, due to neglect or refusal by any property owner to pay any maintenance assessments levied.

The municipality could also require the posting of a performance bond in the bylaw/ordinance to ensure upkeep of the area.

Maintenance:

The planning board shall require the establishment of ongoing maintenance standards as a condition of development approval to ensure that utilities are properly maintained and the open space land is not used for storage or dumping of refuse, junk, or other offensive or hazardous materials. Such standards shall be enforceable by the Town against any owner of open space land, including an HOA. If the Board of Selectmen finds that the maintenance provisions are being violated to the extent that the condition of the utilities or the open land constitutes a public nuisance, it may, upon 30 days written notice to the owner, enter the premises for necessary maintenance, and the cost of such maintenance by the Town shall be assessed ratably against the landowner or, in the case of an HOA, the owners of properties within the development, and shall, if unpaid, become a property tax lien on such property or properties.

Submission Requirements: In order to enable the planning board to determine whether or not a proposed open space design satisfies the purposes and standards of the Open Space Design section of the Zoning [Bylaw/Ordinance] an applicant must present sufficient information on the environmental and open space resources for the Board to make such as determination. The required information shall be provided in the form of a “conservation analysis” as described in the Subdivision Regulations. In the case of an Open Space Design that is not a subdivision, and that is presented as a site plan review application, the planning board may require the submission of all or only part of a conservation analysis as described in the subdivision regulations. Proposed use(s) of the open space consistent with this section shall be specified in the application.

Wastewater Disposal: *Wastewater disposal is often cited as concern in regard to permitting and construction of open space designs. Indeed, many communities utilizing this model zoning bylaw/ordinance will not have sewers available. However, particularly with cooperation from the local Board of Health it is entirely feasible to construct open space design projects in the absence of sewer lines and a conventional wastewater treatment plant. With careful planning and regulation instead of wastewater as a control density can be determined by local zoning and subdivision regulations, providing flexibility in design and land use management*

Standard Title 5 systems are often the preferred approach to on-site wastewater management within an open space design because the permitting process is relatively fast and the technique is familiar and predictable. While a standard Title V system requires 10,000 square feet of lot area per bedroom – a builder’s acre of 40,000 square feet for a four bedroom home – a number of options are available to decrease lot sizes consistent with open space design. The first way in which additional density can be realized under Title V is for a builder to provide water via a common well instead of individual wells on each lot. This eliminates the need to accommodate the required 100 foot setback between well and septic on each lot. An acknowledged disincentive to this approach is that a water source with more than 15 connections or that serves more than 25 individuals is deemed a “public water supply” which requires a permit from the Department of Environmental Protection and ongoing water quality monitoring. Another alternative that applies to Title V systems is approval of a Nitrogen Loading Aggregation Plan. Plan approval allows a developer to meet land area requirement for wastewater discharge by getting credit for land in the common open space.

Next, allowing construction of a shared septic system is another logical means for municipalities to facilitate the construction of open space designs. Shared systems can accommodate up to 10,000 gallons per day (larger systems are administered by the Department of Environmental Protection). This is the equivalent of thirty homes with 3 bedrooms or 22 homes with four bedrooms. Following this approach, the wastewater disposal needs of all houses in the open space design are calculated and added together. Then, a common system is constructed with standard Title V system components sized sufficiently to accommodate flow from the entire development. The leaching field can be placed in the most advantageous location eliminating the need to find a suitable site on each lot. It worth noting that a 2006 change to Title V gives cluster or OSD developments an advantage over conventional subdivisions in that it need not be proven that a conventional Title V system could sited on the lot of each home. This affords the flexibility to design a site consistent with OSD, especially on sites with shallow depth to groundwater or poor soils that make it difficult to prove each lot can support its own system. The following example is from the Massachusetts Smart Growth/Smart Energy Toolkit:

“To give an idea of the increased density possible with a shared system, consider a 30-acre parcel where the local zoning has a one-acre minimum lot size as a base requirement. If the development of thirty homes is clustered on 0.25-acre lots with a shared system, the development only requires 7.5 acres of land (plus some area for roads, wastewater disposal, and drainage facilities). In this manner, over 50% of the lot area can remain undeveloped. In this case the leaching field would be approximately 13,400 square feet in an area with permeable soils. “

Title V also provides for the utilization of innovative and alternative septic technologies. A range of technologies has emerged that provide enhanced treatment of pollutants, thus allowing for higher densities of development than those supported by standard systems. Alternative system that provides additional wastewater treatment prior to discharge can increase allowed flow to 660 gallons per 40,000 square feet of lot area, the equivalent of a three bedroom home on a half acre lot.

In addition to working with Title V systems, developers can ease design constraints by constructing a package treatment plant to serve the open space design. The use of a wastewater treatment plant expands the options for higher density development as lot sizes are not controlled by the need to provide an on-site septic system. While this option is expensive, it can make financial sense under certain circumstances – such as the higher densities that occur within the developed portion of an open space design.

For further information on these and other options communities should consult the Wastewater Alternatives module of the Commonwealth’s Smart Growth/Smart Energy Toolkit at http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-ww.html.

Model Open Space Design Subdivision Regulations

The Design Process - Conservation Analysis and Site Design:

In order to enable the planning board to determine whether or not a proposed Open Space Design satisfies the purposes and standards of the Open Space Design section of the Zoning [Bylaw/Ordinance] and complies with the subdivision regulations an applicant must follow a prescribed design process and provide sufficient information on the environmental and open space resources found on the proposed project site.

At the time of the application for subdivision approval applicants are required to demonstrate to the planning board that the following design process was utilized by a certified landscape architect to determine the site layout including proposed streets, house lots, unit placement if treated as a condominium, and designation of all common areas and open space.

Design Process:

- A. Informational Meeting: Prior to filing an application, an applicant is encouraged to meet with the planning board to discuss the conservation resources on the site. At such a meeting, the planning board shall indicate to the applicant which land is likely to have the most conservation value and be most important to preserve and where development may be most appropriately located.

Technically the conservation analysis and findings must be done as part of the formal subdivision review. A developer must be able to walk in and file a completed definitive plan, application, and fee, accompanied by their conservation analysis, and have it date stamped as submitted. The clock on the hearing will start, as does the review of the analysis that will lead to findings. As with any subdivision the plan can be modified during the hearing or decision period, though the conservation analysis and findings process should not change any numbers from zoning (e.g. yield or conserved open space).

However, it makes much more sense to do the analysis at the pre-application stage. A developer can avoid a lot of potential cost and aggravation by doing so. Even presenting a sketch plan to the Planning Board in lieu of the more formal analysis is helpful at the informational stage. Since under state statute an informational meeting can't be mandated, communities are strongly urged to encourage it in their subdivision regulations and informal interaction with developers.

B. Conservation Analysis: Identification of Conservation Areas and Potentially Developable Area

Primary Conservation Areas, such as wetlands, riverfront areas, and floodplains regulated by state or federal law, are to be identified and delineated. Development is prohibited within Primary Conservation Areas. Secondary Conservation Areas including unprotected elements of the natural landscape such as steep slopes, upland buffers to wetlands, streams, and vernal pools, mature woodlands, prime farmland, meadows, wildlife habitats including corridors for wildlife movement, and cultural features such as historic and archaeological sites and scenic views shall also be identified and delineated. Master and open space and recreation plan conservation goals are to be considered when delineating such conservation areas. Land outside identified Primary and Secondary Conservation Areas is the Potentially Developable Area.

Conservation Areas and Potentially Developable Areas shall be delineated such that open space is contiguous to the extent feasible. Open space will still be considered contiguous if it is separated by a roadway with undeveloped frontage. The planning board may waive the contiguity requirement for all or part of the required open space where it is determined that allowing noncontiguous open space will promote the goals of this [Bylaw/Ordinance] and/or protect identified Primary and Secondary Conservation Areas.

The planning board, in consultation with the conservation commission shall study the conservation analysis, may conduct field visits, and shall formally determine which land should be preserved and where development may be located. As part of its decision the planning board shall make written findings supporting this determination (the “conservation findings”). These findings must provide a viable location for the number of units specified in the zoning. Once the Potentially Developable Area has been determined applicants shall layout the components of the subdivision within that area including road rights of way, streets, any shared driveways approved via special permit, trails, sidewalks, and other infrastructure as well as lot lines.

- C. Standard for Approval: The planning board shall deny any application that does not include sufficient information to make conservation findings, that deviates from the zoning requirements, or that does not preserve land that the planning board determines should be preserved from development as a result of the conservation analysis and findings. The conservation findings shall show land to be permanently preserved by a conservation restriction, and include recommended conservation uses, ownership, and management guidelines for such land. The planning board’s conservation findings shall be incorporated into its decision to approve, approve with conditions, or deny an application. The conservation findings shall also indicate preferred locations for development if the OSD plan is denied based upon such findings.

The conservation analysis and findings process cannot be used to directly or indirectly deny a subdivision application or to make it technically or financially infeasible. This is true of any conditions or requirements imposed on a subdivision or site plan.

Communities should recognize that they are applying the conservation analysis to a by-right use, and in this way the process is analogous to site plan review of a by-right use. Unlike a special permit under zoning, the review is not discretionary and the planning board can't just say no. An applicant will get its subdivision, but the exact layout is being worked out through the design process. The amount of developable land is guaranteed by the zoning and the board must, in its findings, provide a viable location for the number of units specified in the zoning. It's just the location of the units and open space relative to the whole property that is the subject of the conservation analysis and findings. Denials should be extremely rare and only occur if conditions cannot be applied sufficient to ensure that the subdivision conforms to the regulations. In the exceptional circumstance where the developer and the board reach an impasse on the design the board should indicate in its denial the areas that would be acceptable for development.

The applicant can be required to submit all information reasonably necessary to provide the basis for an informed planning board decision that addresses specific site planning and subdivision criteria. This information can then be used to shape the conditions of approval, but such conditions cannot have the effect of a de facto denial. This applies to all kinds of conditions and requirements, including conservation analysis and findings. Locating and defining conservation areas, uses, and requirements, and tying this process in with open space planning, is good practice in site planning and subdivision approval.

Design Standards:

The following standards shall apply to all Open Space Designs, and govern the design and development process:

- A. Disturbed Areas: In order to maximize the amount and contiguity of preserved open space, and consistent with the planning board's conservation findings, every effort shall be made to minimize and concentrate the amount of disturbed area (defined as any land not left in its natural vegetated state), by minimizing tree and soil removal. Any grade changes shall be in keeping with the general appearance of the neighboring developed areas. The orientation of individual building sites shall maintain maximum natural topography and cover. Topography, tree cover, surface water buffers, and natural drainage ways shall be treated as fixed determinants of road and lot configuration rather than as malleable elements that can be changed to follow a preferred development scheme.
- B. Ways: Streets shall be located and designed to maintain and preserve natural topography, significant landmarks, and trees; to minimize cut and fill; and to preserve and enhance views and vistas on or off the subject parcel. The planning board may modify the applicable road

construction requirements for new road within an Open Space Design as provided in the Subdivision Regulations if it finds that such modifications will be consistent with the purposes of this section, the Open Space Design requirements of the Zoning [Bylaw/Ordinance] and the Master Plan.

- C. Aesthetics: Development shall relate harmoniously to the terrain and the use, scale, and architecture of existing buildings in the vicinity that have functional or visual relationship to the proposed buildings. All open space (landscaped and usable) shall be designed to add to the visual amenities of the area by maximizing its visibility for persons passing the site or overlooking it from nearby properties.
- D. Cultural Resources: The removal or disruption of historic, traditional or significant uses, structures, or architectural elements shall be minimized insofar as practicable, whether these exist on the site or on adjacent properties.
- E. Stormwater Management: The use of Low Impact Development techniques - practices that limit off-site stormwater runoff (both peak and non-peak flows) to levels substantially similar to natural hydrology by emphasizing decentralized management practices and the protection of on-site natural features - is required. Drainage design shall comply with the most recent version of the Massachusetts Stormwater Management Policy standards. A conceptual landscape plan shall be provided demonstrating that the facility will have dedicated access for maintenance, shall be adequately screened from view, and protected from trespass.
- F. On-site Pedestrian and Bicycle Circulation: Walkways, trails and bicycle paths shall be provided to link residences with recreation facilities (including parkland and open space) and adjacent land uses where appropriate.

Wastewater Disposal:

The applicant shall show on the plan sufficient information with respect to existing and proposed underground structures and septic disposal areas to enable the Board of Health to evaluate whether there is adequate area for a septic disposal system to be located on a lot to serve any permitted use of the lot. Where a lot(s) is to be served by public sewers or by a package treatment plant, the application shall contain a certificate from the Board of Health stating that such public sewers or package treatment plant are adequate to serve any permitted use of the lot(s).

Open Space Design: Special Permit for an Increase in Permissible Density

Because this model permits open space design as of right, with a typical project requiring only subdivision plan approval, it is necessary for density bonuses to be enabled via an optional special permit provision.

The planning board may award via special permit a density bonus to increase the number of dwelling units beyond that otherwise allowed. The density bonus for an Open Space Design shall not, in the aggregate, exceed [30%] of the allowable residential units. When determining the final total number of bonus dwelling units fractions of less than .5 shall be rounded down to the nearest integer and .5 or more shall be rounded up. A density bonus may be awarded in the following circumstances:

The highest level of density bonus, listed above as 30%, is a critical consideration. The higher the number, the more enticing the density bonus will be. If the community is very serious about maximizing open space protection, providing public access, preserving historic structures, producing affordable housing, or realizing some other public benefit it will want to consider increasing this number to 50%, if not more.

There is another possible use of density bonuses that municipalities may wish to consider. As drafted this model bylaw permits Open Space Design by-right, recognizing that a discretionary special permit is a significant disincentive to a developer. However, Ipswich has opted to permit Open Space Design by special permit, while offering a significant enough increase in density - 100% - that most developers select this option despite the uncertainty. This allows a community to retain the ability to carefully condition a proposed project after submittal instead of exercising discretion up-front through prescriptive zoning and subdivision standards. Of course, a community implementing this option will need to be comfortable with the resulting overall increase in housing units.

- A. If deeded public access to the open space portion of the property is provided for the purpose of passive recreation only and the planning board finds that such access provides a significant recreational benefit, a maximum of [10%];

Planning Boards should weigh the benefits of public access against potential detriment to the conservation values of the open space.

- B. For every historic structure on the project site that is 1) listed or eligible for listing on the state register of historic places or 2) has been determined by the [CITY/TOWN] historic preservation commission to be significant in the history, archeology, architecture or culture of the [CITY/TOWN] that is made subject to a permanent historic preservation restriction in accordance with G.L. c. 184 § 31, [one] dwelling unit may be added;

Communities may wish to limit this bonus to principal structures or to define a structure for this purpose. Is it the intent of the community to give a dwelling unit for the preservation of a barn, cabin, or other accessory structure?

- C. For each additional [10%] of the property permanently preserved as defined in Article 97 of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts as natural open space (over and above the required [minimum percentage as set by the CITY/TOWN in the bylaw/ordinance], a bonus of [10%]; or
- D. For every [two] dwelling units restricted in perpetuity in accordance with G.L. c. 184 § 31 to occupancy by Moderate-Income Households*, or for every [one] dwelling unit restricted in perpetuity to occupancy by Low-Income Households*, [two] market rate dwelling units may be added. Affordable housing units may receive a density bonus only if they can be counted toward the municipality's subsidized housing inventory as determined by the Massachusetts Department of Housing and Community Development. The applicant shall provide documentation demonstrating that the unit(s) shall count toward the community's subsidized housing inventory to the satisfaction of the planning board.

* Those listed as "Very Low Income" and "Low Income" respectively in statistics published annually by the Department of Housing and Urban Development.

Municipalities should carefully select those public benefits for which they will offer an incentive. The four listed above are the most common. Communities will also wish to consider the level of incentive offered for each in order to fine-tune the bylaw/ordinance to meet their needs. The suggested density bonus for the provision of affordable units is responsive to discussions with housing developers who cite the high costs associated with integrating affordable units into a standard market-rate subdivision.

Open Space Design: Special Permit for Shared Driveways

Definition: A shared driveway is not a street, but provides legally and practically adequate common vehicular access to and from a public street to lots/units which would otherwise be required to have their own access and frontage. A shared driveway is jointly owned in fee or as an easement as specified on the deeds of the owners of the properties to which it provides access. Maintenance of a shared driveway is arranged between the joint owners as specified in deeded covenants.

1. The planning board may issue special permits allowing shared driveways that serve up to [five] dwelling units. The owner(s) of all lots or dwelling units to be served by the shared driveway must be party to the application for a special permit. A shared driveway must lie entirely within lots being served or the open space within an Open Space Design. If serving more than two units a shared driveway will be called a “way” with a sign placed in plain view of its intersection with a way on which the public has a right of access.

Municipalities should adjust the number of units that can be served by a shared driveway based on the unit types allowed, local subdivision road standards, and other factors. For example, multi-family buildings and/or accessory dwelling units will generate a different number of cars and frequency of trips than a shared driveway serving solely four bedroom single-family homes. Ultimately, when setting a unit count communities will want to weigh the open space design advantages of shared driveways against roads that more closely mirror subdivision standards.

Applicants must provide:

- a. Evidence of deeded covenants for all lots or dwelling units served by the shared driveway which include provisions that are adequate in the opinion of the planning board and [CITY/TOWN] counsel to:
 - i. Establish a maintenance association comprised of the owners of all lots or units served by the shared driveway;
 - ii. Ensure continued maintenance of the shared driveway surface and its drainage structures;
 - iii. Provide for the collection of dues and assessments for any necessary ongoing maintenance, repairs, and any plowing/sanding of the shared driveway; and
 - iv. Provide a compliance mechanism enforceable by the maintenance association in the event of non-payment of dues or assessments by a member.
- b. Guarantees including but not limited to financial security as provided by the Subdivision Regulations that the shared driveway will be constructed if the permit is issued;
- c. A plan signed by a registered professional engineer for the shared driveway showing alignments, grades, subsurface preparation, drainage facilities, and surface materials.

2. The shared driveway shall be designed to safely handle the proposed traffic and provide year-round access for emergency vehicles, and shall satisfy at least the regulations for driveways in this [bylaw/ordinance]. In no instance shall a shared driveway be longer than [750] feet or have a grade of over [6%] if gravel or [12%] if constructed of a hardened surface such as asphalt, concrete, or oil and stone. The planning board may require enhanced subsurface preparation, drainage, alignment, width, turnouts, and surfacing as long as the standards for the least stringent road standards within the Subdivision Regulations are not exceeded.

If subdivision regulations permit cul-de-sacs longer than 500 feet allowing shared driveways of the same maximum length will facilitate OSD.

3. The municipality may not be compelled to provide construction, reconstruction, maintenance, snow plowing, school bus pick-up, police patrols, or other services along a shared driveway.
4. Shared driveways need not become public ways.
5. A shared driveway shall not exempt an applicant from meeting applicable parking requirements for individual dwelling units.

Communities that set no frontage requirement as suggested in the model zoning do not need sections 6 and 7 below. However, if a community has chosen to require frontage it should adopt the following language allowing the frontage standard to be waived.

Alternative:

6. A shared driveway shall in no way exempt an applicant from meeting applicable frontage requirements for each individual building lot unless a reduction in frontage requirements is granted in accordance with the following flexible frontage provision.

7. Flexible Frontage: In order to reduce the number of curb cuts onto roadways, preserve the natural and cultural resources visible along these roadways, facilitate the movement of wildlife across roadways, protect recreational access to backland, and improve the design of Open Space Designs and other smaller residential neighborhoods the planning board may approve in its special permit for a shared driveway a reduction or elimination in frontage requirements for one or more of the lots proposed to be served by the shared driveway. Such reduction or elimination of frontage requirements shall not affect any other dimensional requirement for the lots to be served by a shared driveway or result in more than twice the number of lots otherwise possible without such reduction or elimination. In order to take advantage of this provision an applicant shall obtain the required special permit for the shared driveway prior to seeking approval for the creation of the subject lots under the “approval not required” provisions of the subdivision regulations. The planning board may approve such frontage reductions or eliminations only if it finds that the goals listed in the first sentence of this paragraph will be better achieved than without the reductions or eliminations.

Subdivisions: Rapid Assessment for Consistency with OSD/NRPZ Best Practices

<u>Factors (by approx. import)</u>	<u>Best Practice</u>	<u>Good</u>	<u>Fair</u>
<u>Permit Type</u>	Only by- right option	A by right option	Only by special permit
<u>Land area to which the zoning is applicable</u>	All undeveloped land where residential subdivision is allowed ¹	Undeveloped land of particular environmental sensitivity where residential subdivision is allowed.	Only a small amount of undeveloped land where residential subdivision is allowed.
<u>Minimum Open Space</u>	75-90%	65-75%	50-65%
<u>Allowed dwelling units calculation</u>	By formula	Subdivision plan with selected percolation test(s)	Full subdivision plan with full percolation tests
<u>Minimum project size</u>	None	5-10 acres	≥ 10 acres
<u>Review Process</u>	Conservation Analysis or "OSRD" 4 Step	Cluster layout	No detailed analysis of site characteristics.
<u>Ownership of Open Space</u>	Appropriate to the resources present; however, the decision on ultimate ownership of the open space must be left to the original landowner. For example, agricultural or forestry land in continued ownership by the farmer or forest land owner (preferred option), a homeowners association if the land is unsuitable for agriculture or forestry, or a governmental agency (if the open space is key watershed land, critical habitat, or land of high recreational value that is not compatible with the landowner's management goals).		
<u>Dimensional Standards; area, frontage, setbacks, etc.</u>	None, except for minimum property-line offsets (e.g., 10 feet).	Reduction with specified minimums	As specified for conventional subdivision
<u>Quality of open space conserved: Specificity of local priorities for natural, cultural, and historic resource conservation</u>	Local priorities clearly and unambiguously stated and mapped for use in site design.	Lack of specificity regarding local conservation priorities; no map of priority locations	No indication of local conservation priorities, or language that refers only to regulated resource areas.
<u>Contiguity of open space; relationship to previously protected open space</u>	Contiguity required; adjacent land considered	Contiguity required within subdivision	No contiguity requirement
<u>Quality of open space conserved: Allowed uses of open space</u>	Clear list of allowed uses consistent with farming, forestry & other conservation & recreation goals	General language regarding use of conserved open space	Allowed use of open space not addressed
<u>Quality of open space conserved: Submission requirements - GIS maps, data, etc. to inform the review process</u>	Specific plans, maps, & comprehensive data regarding natural, cultural, & historic resources required & used as the basis for open space conservation	General non-comprehensive data and mapping requirements; vague process for the application of the data to site design and open space conservation.	Vague or no language regarding submission of information on site resources and no specified process for the use of the data submitted.
<u>Relationship to Plans</u>	Required consideration of open space goals of OSRP, master, and/or regional policy plan	Optional consideration of open space goals of OSRP, master, and/or regional policy plan	Relationship to plans not discussed
<u>Low Impact Design</u>	Required	Encouraged	Not addressed
<u>Density bonus for enhanced public benefit(s)</u>	Automatic or formulaic bonus	Bonus by special permit	No bonus offered
<u>Transfer of Development Rights (TDR) provisions.</u>	TDR to broadly defined receiving zones	TDR to limited receiving zones	No TDR option
<u>Review Entity</u>	Planning board	Planning board	ZBA, council or selectmen as special permit authority
<u>Flexibility re: open space protection to facilitate on-site wastewater treatment facilities</u>	If necessary, required open space may be reduced by ≤ 10% to accommodate; disposal area deed restricted; aggregate calculations allowed by BoH, etc.	Aggregate calculations allowed by board of health	No flexibility provided
<u>Monitoring of open space</u>	Specific provisions to aid endowed monitoring by a conservation org. @ stated intervals	Provisions to facilitate, municipal monitoring, or no specificity regarding monitoring interval	No specified monitoring requirements and no requirements that would assist the party responsible for monitoring

¹ The technique can also be applied to non-residential development, including mixed-use.

Other: Municipalities should ensure that subdivision & other local regulations do not interfere with implementation including board of health wastewater disposal regulations and carefully determine how to address wetlands when setting open space & dimensional standards.