

STATE ENVIRONMENTAL QUALITY REVIEW ACT
FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT (FGEIS)
For the Town of Pawling Comprehensive Plan Update (CPU)
And Zoning Amendments

Dated: April 3, 2012

Appendix 5

Open Space Design Materials

FITTING INTO THE LANDSCAPE

Rural development should fit into its natural surroundings, rather than be superimposed as a dominant element in the countryside.

Why Fit In?

We should expect to enjoy and appreciate our environment, even after development occurs. This is possible if we identify and maintain the essential open space system of each location. Conservation subdivisions with smaller average lot sizes will preserve the important natural characteristics of the site and forever provide residents proximity to a rural setting. The ability to require conservation subdivisions is allowed by New York State Town Law, Section 281.



A rural farm house sheltered in the treeline stands in contrast to the new house lots now dividing up the former fields.

Ideally, most new construction will be encouraged in and around centers or in traditional hamlet-scale groupings, but low density development will still continue in rural areas. Local planning boards can insure that developers blend new buildings into the landscape by requiring that they **identify the open space system PRIOR to submitting any plan for subdivision**. Some sites will be more complicated than others, but identifying the open space system is the necessary first step for “fitting in.” Once site characteristics are fully understood, then suitable areas for development are delineated. Within these areas, house lots and roads are located. Only as a LAST STEP are the lot lines drawn in.

Rural Development Guidelines

- **Minimize the clearing of vegetation and preserve important natural features.**
- **Retain stone walls, hedgerows, and other rural landscape elements.**
- **Place buildings and access roads in treelines, on mildly sloping ground, or along the edges of fields; avoid construction in open fields or on ridgelines.**
- **Locate structures and septic systems more than 100 feet from streams or ponds to protect water quality.**
- **Re-use farm roads or country lanes whenever possible, rather than constructing new wide roads.**
- **Maintain or enhance scenic views. Protecting the character of the landscape also protects the property’s most valuable assets.**

Open Space System Components

- Agricultural Lands
- Wetlands and Floodplains
- Steep Slopes
- Mature Tree Stands
- Views from the Road
- Aquifer Recharge Areas
- Significant Plant and Wildlife Habitats
- Cultural Features, such as stone walls, barns, and historic buildings

“The ultimate goal is the creation of an interconnected network of protected open space weaving through each community.”

Randall Arendt

How to Create Conservation Subdivisions

Step 1

Require a map of the open space system for the parcel and surrounding area.

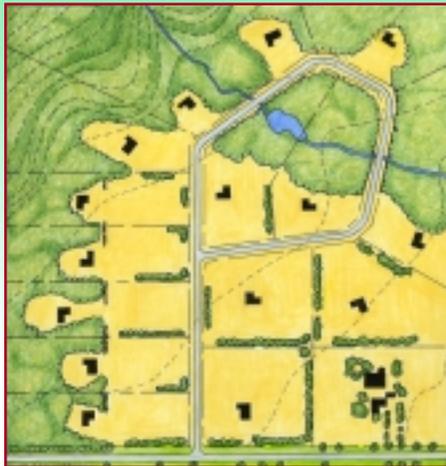


Locate Development Pocket

A sketch analysis of the area provides all the basic information to calculate how a development can fit into the landscape - what land should be protected and potential development pockets.

Step 2

Conventional sketch layout determines maximum lot count under existing three-acre zoning.



Typical Superimposed Subdivision

- Productive farmland lost forever.
- Pleasant view from road eradicated.
- Stream corridor cut off by backyards.
- Large lots divide up and dominate the landscape.
- Individual road for each subdivision.
- Costly road and bridge construction.
- No chance for residents to enjoy special site features.

Step 3

The same number of houses can fit in to the landscape while preserving 80 percent of the open space.



Conservation Subdivision

- Large farm field protected.
- Rural view from road retained.
- Trail system allows access to stream.
- Smaller, but substantial individual lot sizes with central green.
- Potential connection to adjacent parcel.
- Less expensive construction costs.
- Residents have views of open field and direct access to woods.

Maintaining Conservation Areas

There are three primary methods to secure the open space system:

1. dedicate for public park land;
2. create a conservation easement and maintain open space through a Homeowners' Association or agreement with a conservation organization; or
3. develop easements for certain community rights on private property, such as trails.

The second and third options will be used most frequently. Open space subdivisions are only possible when local planning boards believe enough in the conservation subdivision process in order to insist on making these techniques work.

Common Uses for Protected Open Space System

- Agriculture
- Community Gardens
- Forest Management
- Trails
- Visual or Sound Barriers
- Common Septic Fields
- Pastures or Paddocks
- Meadows
- Recreational Fields
- View Protection
- Wildlife Habitat

Sources:

Randall G. Arendt, *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks*, 1996
 Dutchess County Department of Planning and Development, *Rural Development Guidelines*, New York Planning Federation, 1994

Chapter 5: Green Infrastructure Practices

This Chapter presents planning and design of green infrastructure practices acceptable for runoff reduction. Green infrastructure planning includes measures for preservation of natural features of the site and reduction of proposed impervious cover. The green infrastructure techniques include practices that enable reductions in the calculated runoff from contributing areas and the required water quality volume.

Section 5.1 Planning for Green Infrastructure: Preservation of Natural Features and Conservation Design

The first step in planning for stormwater management using green infrastructure is to avoid or minimize land disturbance by preserving natural areas. Development should be strategically located based on the location of resource areas and physical conditions at a site. Also, in finalizing construction, soils must be restored to the original properties and according to the intended function of the proposed practices. Preservation of natural features includes techniques to foster the identification and preservation of natural areas that can be used in the protection of water, habitat and vegetative resources. Conservation design includes laying out the elements of a development project in such a way that the site design takes advantage of a site's natural features, preserves the more sensitive areas and identifies any site constraints and opportunities to prevent or reduce negative effects of development. The techniques covered in this section are listed in Table 5.1.

Practice	Description
Preservation of Undisturbed Areas	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.
Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.
Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.
Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.
Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.
Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.

5.1.5 Open Space Design

Description: Conservation development, clustering or open space design incorporates smaller lot sizes to reduce overall impervious cover while providing more undisturbed open space and protection of water resources.

Key Benefits

- Preserves conservation areas on a development site
- Can be used to preserve natural hydrology and drainageways
- Can be used to help protect natural conservation areas and other site features
- Reduces the need for grading and land disturbance
- Reduces infrastructure needs and overall development costs
- Allows flexibility to developers to implement creative site designs including better stormwater management practices

Typical Perceived Obstacles and Realities

- Smaller lot sizes and compact development may be perceived by developers as less marketable – *Open space designs can be highly desirable and have economic advantages such as cost savings and higher market appreciation*
- Lack of speed and certainty in the review process may be of concern – *Consult with the local review authority to review requirements; prospective homebuyers may be reluctant to purchase homes due to concerns regarding management of the community open space – Proper methods and implementation of maintenance agreements are available; natural open space reduces maintenance costs and can help keep association fees down*
- Cluster developments appear incompatible with adjacent land uses and are equated with increased noise and traffic – *Open space design allows preservation of natural areas, using less space for streets, sidewalks, parking lots, and driveways; incorporating buffers into the design can help alleviate incompatibility with other competing land uses*

Using this Practice

- Use a site design which concentrates development and preserves open space and natural areas of the site
- Locate the developed portion of the cluster areas in the least sensitive areas of the site
- Consult with the municipality to find out whether there is a local law or ordinance for cluster development, open space design, conservation design or flexible subdivisions
- Where allowed by the municipality, utilize reduced setbacks and frontages, and narrower right-of-way widths to design non-traditional lot layouts within the cluster

Discussion

Conservation development, also known as “open space residential design” (OSRD), or clustering, is a green infrastructure planning technique that concentrates structures and impervious surfaces in a compact area in one portion of the development site in exchange for providing open space, natural areas or agricultural lands elsewhere on the site. Typically smaller lots and/or nontraditional lot designs are used to cluster development and create more conservation areas on the site.

Conservation development has many benefits compared with conventional development or residential subdivisions: this technique can reduce impervious cover, stormwater pollution, construction costs, and the need for grading and landscaping, while providing for the conservation of natural areas. Figures 5.11 and 5.12 show examples of open space developments.

Figure 5. 11 Aerial view of an open space or “cluster” subdivision (Source: Georgia Stormwater Manual, 2001)



**Figure 5. 12 Open space or “cluster” subdivision example
(Source: Georgia Stormwater Manual, 2001)**



Along with reduced imperviousness, conservation design provides a host of other environmental benefits lacking in most conventional designs. These developments reduce potential pressure to encroach on conservation and buffer areas because enough open space is usually reserved to accommodate these protection areas. As less land is cleared during the construction process, alteration of the natural hydrology and the potential for soil erosion are also greatly diminished. Perhaps most importantly, open space design reserves 25 to 50 percent of the development site in conservation areas that would not otherwise be protected.

Conservation development can also be significantly less expensive to build than conventional projects. Most of the cost savings are due to reduced infrastructure cost for roads and stormwater management controls and conveyances. While conservation developments are frequently less expensive to build, developers find that these properties often command higher prices than those in more conventional developments. Several studies estimate that residential properties in developments with open space garner premiums that are higher than conventional subdivisions and moreover, sell or lease at increased rates. Once established, common open space and natural conservation areas must be managed by a responsible party able to maintain the areas in a natural state in perpetuity. Typically, the conservation areas are protected by legally enforceable deed restrictions, conservation easements, and maintenance agreements.

Flexible lot shapes and setback and frontage distances allow site designers to create attractive and unique lots that provide homeowners with enough space while allowing for the preservation of natural areas in a residential subdivision. A narrower Right-of-Way will consume less land that may be better used for housing lots, and allow for a more compact site design. Figures 5.13 and 5.14 illustrate various nontraditional lot designs.

Figure 5. 13 Nontraditional lot design (Source: ULI, 1992)

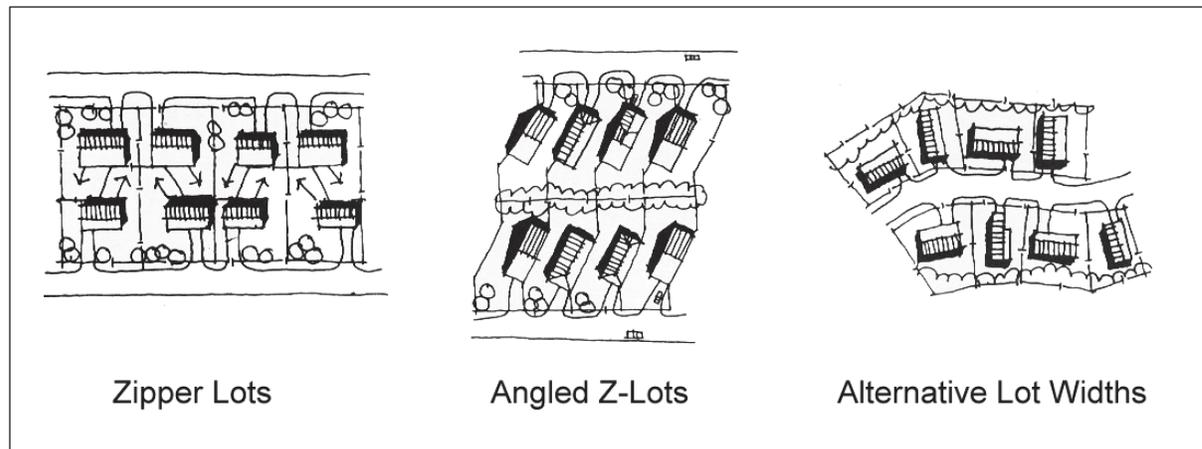


Figure 5. 14 Lots with reduced front and side setbacks



References/Further Resources

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