

Flawed Process, Flawed Results, and a Potential Solution

Randall Arendt, FRTPI

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Ever wonder why the vast majority of subdivisions look so much alike, despite the fact that they are built in such varied landscapes (forest, meadow, field) and on different terrain (flat, rolling, steep)?

The simple answer is that most of them are designed generically, in “cookie-cutter” style, with very little regard to the special natural or cultural features that give many properties their distinctive character.

In most towns, subdivision design regulations have never evolved beyond the basic stage where code requirements focus on a few mundane but important points (soil suitability, wetlands, floodplains, street paving, stormwater management) and a few mundane but rather unimportant points (street frontage, lotline setbacks, lot area).

The sad reality is that most townships do not require subdivisions to consist of anything more than houselots, streets, and drains. And that approvals are forthcoming more or less automatically as long as applicants bring

in plans showing houselots with the minimum required size and frontage, and avoid areas that are inherently unfit for building (wetlands, floodplains, etc.). When community standards are set so very low, developers typically respond with the least imaginative designs, for nothing more is asked of them.

Even in towns which understand that lot size and density are best treated as completely independent variables (controlling density directly so that lot sizes may be trimmed to produce quality open space), subdivision regulations typically suffer from four fundamental flaws, which are reflected in flawed designs.

The first flaw is that most local ordinances fail to require

Randall Arendt is a landscape planner, site designer, author, lecturer, and an advocate of “conservation planning.” He received his M.Phil. degree in Urban Design and Regional Planning from the University of Edinburgh, Scotland. He is Senior Conservation Advisor at the Natural Lands Trust in Media, Pennsylvania, and is the former Director of Planning and Research at the Center for Rural Massachusetts, University of Massachusetts at Amherst, where he also served as an Adjunct Professor in the Department of Landscape Architecture and Regional Planning.

that applicants submit detailed surveys or inventories of their site features, beyond those few which would render property unbuildable (wetlands, floodplains, steep slopes), and ditto for maps depicting the subject parcel's surrounding context.

Second, most municipalities do not require Planning Board members to walk the land at any time during the process, essential to understanding any property, and fail to involve abutters in the process until 95 percent of the work has been completed, which is both insulting and counter-productive.

Third, many codes typically require highly detailed design drawings at the so-called Preliminary Plan stage, involving tens of thousands of dollars expenditure by developers, as the very first submission. Understandably, developers are not inclined to discard such plans, even when better ways to design the development are pointed out to them.

Fourth, layouts are typically prepared by people trained in recording site data, street, and drainage issues (surveyors and engineers), but who have little or no expertise in the field of landscape architecture or neighborhood design.

The solutions are four-fold: (1) require a detailed Existing Resources and Site Analysis Map of the property and a Context Map of the immediate area, (2) conduct a Site Walk with all officials, staff, and abutters from the outset, (3) require an inexpensive conceptual Sketch Plan (or Master Plan) as the first layout document, and (4) require that these Sketch (or Master) Plans be prepared by a landscape architect or physical planner. Following this procedure allows all parties to understand what is important about the property, and to begin a process that is collaborative and consensual, instead of adversarial and combative.

Based on the work I have done at the Natural Lands Trust over the last fourteen years in the state-wide Growing

Greener: Conservation by Design program (supported primarily by the Pennsylvania Department of Conservation and Natural Resources and Department of Community and Economic Development and the William Penn Foundation), and in Rhode Island over the last five years (supported by the RI Department of Environmental Management), the reforms which I recommend often begin with updating local subdivision regulations to include the above-mentioned items, which are described below in greater detail.

A. Context Maps

The Location Map required in most ordinances should be expanded in scope and content so that staff and Planning Board members may acquaint themselves with the resources and development patterns near the development site at an early stage of the process. This kind of understanding is critical to planning for improved buffers and open space connections, and minimizing developmental impacts in the neighborhood. To minimize the cost involved, this expanded item (re-named as a Context Map), would show only data that can easily be reproduced from published sources such as aerial photographs, USGS topography sheets, FEMA floodplain maps, tax maps, and USFWS wetlands maps. These maps and photos should then be reproduced by the applicant's engineer to the same scale (1 inch = 400 feet), showing reviewing officials the location of natural features and development patterns on properties within one-half mile of the development site (just five inches on the map).

B. Existing Resources/Site Analysis Plan

The Existing Resources/Site Analysis (ER/SA) Plan provides a greater amount of essential information than is typically required in most regulations, thoroughly documenting the location of a large variety of site features. It is typically prepared by a landscape architect for the developer, and is sometimes based on recommendations from historic preservation specialists and/or

conservation biologists. Such information enables the site designer, the developer, and municipal officials to make much better-informed decisions.

The ER/SA Plan, which should be required from the outset, tells reviewers virtually everything they need to know about the property in terms of its noteworthy natural and cultural features. Drawn to a scale of one inch equals 100 or 200 feet, it reflects a deep understanding of the site so that even the location of noteworthy trees or tree groups, laurel or rhododendron stands, unusual geological formations, vernal pools, or the depth of the public viewshed can be identified.

Regarding locations of specific features (including trees), the use of Global Positioning Systems (GPS) technology makes their documentation relatively easy and inexpensive. A growing number of communities routinely require that plans show the location of every tree greater than a given diameter, and that these trees be identified by species on the drawing. With respect to the diameter at which a tree becomes noteworthy, I recommend girths related to specific species, such as 4 inches for Eastern redbud or flowering dogwood; 6 inches for a holly, sassafras, or water beech; 10 inches for a wild cherry; 12 inches for a red or white oak; 14 inches for a tulip poplar; and 16 inches for a sycamore.

In this way, reviewers can identify those parts of woods that are more worthy of conservation and “designing around” (which trees to hug and which to let go). However, I would not require this information for trees growing in areas that would not be disturbed because of their location within proposed conservation areas.

In addition, I recommend identifying farmland soils by productivity class, locating vernal pools and their associated upland habitat areas (essential in the life-cycle of salamanders and other woodland amphibians), plus views into the property from public roads or highways, to enable those important considerations to be properly evaluated.

In the absence of sewers, another key factor is data on soil suitability for septic sewage disposal, to locate the very best soil available on the entire property. Septic systems need the deepest, best-drained soil that can be provided, and those areas must be “designed around” just as carefully—and from the very beginning—as any of the “Primary Conservation Areas,” so they may be reserved for sewage treatment and effluent disposal and not be carelessly covered by foundations, driveways, or streets. To maximize the amount of open space, I typically locate septic drainfields (either shared or individual ones) off-lot, in easements under conservation meadows, neighborhood greens, and ball fields.

If officials agree that these items are necessary and should be submitted at some point during the subdivision application process anyway, it doesn’t increase the applicant’s costs for them to be required up front where the important information they provide can be of the greatest use (helping to avoid wasting money on plans that do not take these features fully into account). I feel that this is the most important document in the subdivision design process, as it provides the factual foundation upon which all design decisions are based.

C. Site Walk

Because it is impossible to completely understand a site only by examining a two-dimensional paper document inside a meeting room, it is essential that most Planning Board members, Conservation Commission members, and staff walk the property with the ER/SA Plan, to take the full measure of the proposed development site, and to help them determine which site features are most worthy of “designing around.” I also encourage officials to invite abutters to this advertised site meeting, where information will be collected and input solicited, but where no decisions will be made. I have found that abutters greatly appreciate being included from the outset, and that they are usually much less inclined to fight a process which includes them from the very beginning.

Without the benefit of experiencing the property in a three-dimensional manner at a very early stage in the process, it is extremely difficult for staff and officials to offer informed suggestions as to the preferred locations of conservation areas and development areas, and to evaluate the proposed layouts. In my view, such site walks should definitely become a standard operating procedure, and part of the job description for all Planning Board members (except those with physical disabilities). Officials who choose not to attend Site Walks, and who do not have good reasons to miss them, should be offered other ways in which they might serve the community—because (in my judgment) they cannot serve it well without walking potential development sites. In many towns this is a new concept, and it is often a “hard sell” among local officials who are already very busy with many other matters. However, I maintain, it is simply not possible to make an informed decision without experiencing the site in question. Local officials who take their first site walk with a detailed site analysis map in hand, meeting the applicant, his or her site designer, and abutters in a casual and informal way, tell me they wouldn’t think of missing this critical part of the process ever again.

Regarding timing, I suggest walking the site with the applicant even before the Sketch Plan is prepared, if possible, so that the applicant may receive critical input before he/she prepares that conceptual layout.

I usually end the site walk with an informal design session, where the significant natural and cultural features (from the ER/SA Plan) are identified and “designed around,” with house sites being positioned in proximity to these special features to add value to all homes.

D. Sketch (Master) Plan Overlay Sheet

Apart from the Existing Resources/Site Analysis Plan, the Sketch Plan is perhaps the second most important document in the entire subdivision process. This is the step where the overall concept is outlined, showing

areas of proposed development and areas of proposed conservation. I recommend that the Sketch (Master) Plan be required to be prepared by a landscape architect or physical planner working with a civil engineer. Under this approach, surveyors and engineers would continue to perform all of the usual surveying and engineering tasks—and could end up working even more hours (such as in locating significant trees and rock formations). However, the conceptual design and layout should definitely be handled by the landscape architect or physical planner as a supplemental team member called in for this special service.

The Sketch (Master) Plan should be drawn to scale on white tracing paper or on a clear overlay sheet to be lain on top of the ER/SA Plan so that everyone can clearly see how well (or how poorly) the proposed layout avoids conservation lands with resources that have been ranked highly on the priority list contained in the subdivision regulations. Ideally, the proposed development “footprint” on the Sketch (Master) Plan should dovetail and not intrude upon with the resources documented on the ER/SA Plan. This section of the code should also provide more criteria for staff or Board members to follow, so that everyone knows the parameters for evaluating the Sketch (Master) Plan. The review process for Sketch (Master) Plans should identify and document their shortcomings, which should then be communicated to the applicant, so that these deficiencies can be corrected prior to submitting the detailed, expensive Preliminary Plan.

Under most state planning enabling acts, municipalities can pass along to the applicant the reasonable review costs of consultants including the physical planner or landscape architect to walk the site, conduct the site analysis, and review the site plan, thereby launching the developer in the right direction. Developers with whom I have worked are often skeptical of the value of this approach until they try it once.

It is essential that a conceptual step such as this occur before the applicant spends large sums on preparing the substantially-engineered drawing that typically constitutes the Preliminary Plan. After agreement is reached at this stage, the applicant moves to the Preliminary Plan, with the full benefit of the site analysis, site visit, and concept review to prepare him for the next stage where serious engineering money is spent.

E. Four-Step Design Approach

I believe that the most effective methodology for producing conservation subdivision layouts that are responsive to the site and which preserve value-adding features, begins by determining the open space as the first step. If this is done, and if the regulations also require that a significant proportion of the unconstrained land be designated as open space, it is nearly impossible to produce a truly inferior or simply conventional plan, particularly if that open space is closely related to a Town-wide Map of Potential Conservation Lands in the Comprehensive Plan. The logical second step, after locating the preservation areas, is to select house locations, with homes positioned to take maximum advantage of that protected land in neighborhood squares, commons, greens, playing fields, greenways, farmland, or forest preserves.

The third step involves “connecting the dots” by aligning the streets and trails to serve the new homes. Drawing in the lot lines, Step Four, is the least significant part of the process.

One of the greatest weaknesses of most current “cluster” regulations is that the open space is not defined in this manner, and therefore tends to become a collection of whatever bits of land that have proven difficult to develop. The other common failing of such provisions is that they often require deep perimeter buffers around the proposed development (as if it were a gravel pit, junkyard, or leper colony), a practice that inadvertently leads to very poor layouts in which a substantial

percentage of the total open space is consumed by this excessive separation (particularly needless when new single-family homes are being “buffered” from existing single-family homes).

The combined influence of the expanded Context Map, the Existing Resources/Site Analysis Plan, the Site Walk, the Sketch (Master) Plan overlay sheet, and the four-step design approach makes a significant difference in the way that sites are approached by developers, their engineers, and local officials, and in the quality of the resulting layout of conservation areas, houselots, and streets.

Readers interested in learning more about this approach are referred to *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks* (Island Press, 1996) and its sequel *Growing Greener: Putting Conservation into Local Plans and Ordinances* (Island Press, 1999). They may also download an 18-page booklet describing this process, from the internet, at www.natlands.org (see the “Resources” listing at the end of this article for details).

Resources

1. Scott Millar, Administrator
RIDEM Sustainable Watersheds Office
401-222-3434
Web site with several excellent downloadable publications: www.state.ri.us/dem/programs/bpoladm/suswshed/Pubs.htm
2. Randall Arendt, FRTPI, Conservation Planner
Ordinance Assessments, Conceptual Site Designs
E-mail: rgarendt@cox.net
Website: www.greenerprospects.com (for bio, publications info, etc.)

3. Tony Lachowicz, AICP, Ordinance Consultant

Ordinance Revisions

E-mail: tonylz@cox.net

4. Growing Greener Program Summary booklet

Downloadable at www.natlands.org/categories/article.asp?fIdArticleId=65