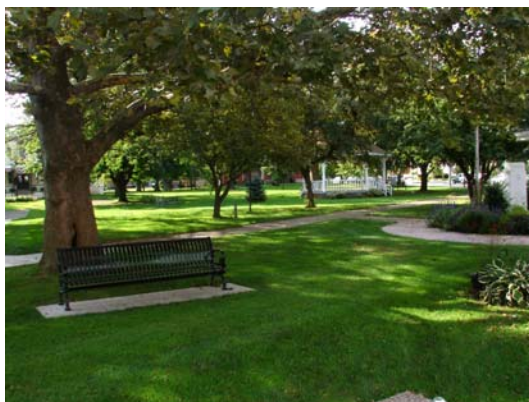
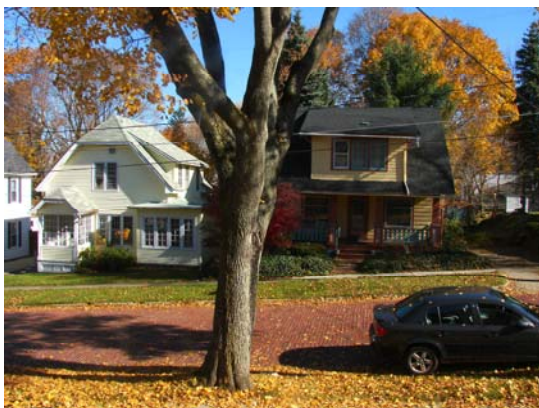
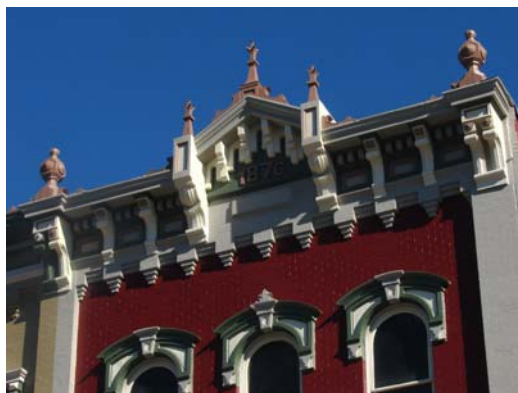


Visualizing the Options: Choosing Among our Alternative Futures

Chautauqua County Design Principles Guidebook

by Randall Arendt

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Introduction

The New Chautauqua County *Comprehensive Plan*: Thoughts & Opinions

Offered by John Shedd, AIA, R.W. Larson Associates, Lakewood, NY

As one of the many people who made a conscious choice to leave booming metropolitan cities and fast-paced corporate jobs to move to Chautauqua County, I have always focused my attentions inward, toward what I can do to make Chautauqua County an even better place to live.

It is for this reason that I am delighted that the County is publishing this “rural-by-design guidebook” by Randall Arendt. We need to set a tone for the County’s new *Comprehensive Plan*, and we can do that by recognizing that this is a rural community. This is one of the major reasons so many people are beginning to invest their future here, and it is a good starting point for taking action. We want growth, and we can all benefit from the ideas contained in this booklet, which encourages positive growth through good design.

With this viewpoint in mind, I would like to share the following thoughts on some directions Chautauqua County might aim toward in the future.

Build Upon What We Have

The allure of Chautauqua Lake and the friendly small town lifestyle of our region is what originally attracted my family to this county. This characteristic of our region is also what many “out-of-the-area” visitors to our home have claimed to envy in our lifestyle. This characteristic must be retained and built upon through active marketing within our region and outside the County. The natural and architectural character of our small towns must also be vigorously protected and maintained throughout the County. The value of our small town character is literally priceless.

Improve Upon What we Have, and Tell Everyone About It

Going hand-in-hand with these voluntary, recommended design guidelines, progressive marketing and merchandising assistance/consultation should be actively offered by the County to businesses locating here, together with tax incentives in strategically identified areas, similar to the current Empire Zones.

Coordinated, seasonal marketing programs that attract visitors year-round would increase the attractiveness of our region for both visitors and residents. Each community should have its own plan for attracting and retaining optimal, desirable business types that would complement and balance each other (restaurants, book stores, gift shops, professional services, etc.).

Foster New Growth through Improved/Expanded Infrastructure

We must also provide the appropriate infrastructure to allow entrepreneurs to do business and succeed. High-speed internet access and clean, low-cost power (such as wind energy) must be provided to reduce the financial burdens on residents to make profitability and business success even more likely. Each community must also be provided with modern water and sewer systems. Our County should consider constructing the infrastructure for an entire wind energy and geothermal industrial park—a “Green Industrial Park” that could serve as a national model and receive national recognition. The entire park could be self-contained—possibly located at one or both of our county airports to increase the efficiencies related to transporting goods and services via air transport and along routes I-86 or I-90. All water systems and sanitary systems could incorporate sustainable design concepts such as re-using grey water for non-potable water consumption. Storm water run-off control systems could be collectively and efficiently designed to accommodate an entire master-planned industrial park. Design guidelines for facilities constructed in this new “Green Industrial Park” could foster the use of LEED (Leadership in Environmental and Energy Design) principles. This model could be re-produced around the state and around the country. A similar model could also be prepared for new and existing mixed-use communities.

Create Another Four-Year University and Trade School

College communities tend to have strong, stable economies that tend to attract talented workers to a region, while opening up research and development possibilities that benefit our local communities. Complementing our existing SUNY/Fredonia and Jamestown Business College, we should plant the seed for another such educational facility, associated with the Chautauqua Institution. A great amount of the infrastructure already exists at the Institution, and

is mostly under-utilized outside their summer season. This new “university” could focus on art, entertainment, music, culinary arts, restaurant and hotel management, sports management, tourism, etc.

Trade schools and specialty educational institutions also help local people and attract future residents. In addition to JCC and BOCES, a larger technical college, taking advantage of our regional assets, should be encouraged. Some educational offerings could include viniculture (associated with our world-class Concord grape heritage), historic preservation (specializing in restoring historic buildings), natural sciences (specializing in lake management), natural resources and wildlife (taking advantage of our local Roger Tory Peterson and Audubon presences), wind energy technology, etc. Any of these programs could also be associated with our existing universities and colleges as well.

Transportation Improvements

With Chautauqua County located directly between Cleveland, Pittsburgh, Buffalo, Toronto, and NYC, we are in a prime location to become a hub point for a possible high-speed rail system, allowing entrepreneurs and businesses to access major cities. It would also encourage city dwellers to visit our region and possibly stay.

Government, Taxes, and Regulations

The high tax rate and regulatory burden discourage business creation and stifle growth. These barriers should be lessened.

Consolidating Local Service Provision

A final, and perhaps most challenging goal, is to merge our incorporated villages and towns, to reduce costly and inefficient duplication of services. An excellent first step in that direction would be for municipalities to some of their services, with multi-town police, fire, public works, and schools, sharing services and reducing tax burdens, while becoming more effective. The County could provide some of those services on behalf of the towns themselves, as is done in many states, such as Maryland and Virginia.

Improving upon a natural treasure like ours is much easier than starting with nothing. We have the seeds for an incredible “harvest” if we manage and improve upon our existing “crops”. Our lakes and natural resources are the “seeds”. Our people and businesses are the “crops”. We must invest in ourselves and show pride in our region. We are fortunate to live the American Dream in Chautauqua County. Let’s make it possible to stay here.

The design concepts presented in this booklet give the County a starting point for any type of new growth and development. Once we lose our rural character, it is gone forever.



John Shedd, AIA

Foreword

This booklet contains numerous ideas and concepts that are being offered to officials, residents, and business people across the County, as food for thought. They reflect some of the more progressive and creative approaches to managing growth and the change it brings to small towns in rural areas.

The timing of this booklet deliberately co-incides with the County's new *Comprehensive Plan* update. It is intended to provide a foundation stone for that document, to augment the visioning process accompanying the *Plan* update, and to supplement the *Plan*'s content with particular respect to the design issues that affect the visual quality of new development, infill, and re-development (subject areas that most comprehensive plans typically do not address to any degree).

It is hoped that some, perhaps many, of the ideas described and illustrated in this booklet will spur discussion among a wide variety of interested parties and stakeholders, and that they will ultimately result in communities adopting guidelines or standards which will help shape development and redevelopment for decades to come.

The planning approaches and design principles illustrated here closely mirror the kinds of development rated highest in the *Image Preference Survey* conducted in October 2008. Generally speaking, local residents and officials need to picture the results of different development approaches before their community can be motivated to take a positive role in shaping its future land-use patterns and overall appearance.

Visual images provided the principal means of teaching and communication throughout the multiple workshops conducted as part of this project. Information was presented through the medium of color slides (now Powerpoint) to make the planning and design concepts more easily understood by project participants, most of whom were members of municipal boards and commissions, without formal training or professional backgrounds in town planning and/or community development.

As part of the residential development training, participants laid out a conservation subdivision following the four-step design process detailed in this booklet. This process enabled them to better understand the planning principles described and illustrated by the slideshow in the first half of the training.

Communities that have successfully attracted retail trade from tourists and other new customers have done so, in many cases, by taking stock of the appearance of their downtown districts and then taking steps to build support among merchants and landlords to gradually recreate the community's once-distinctive streetscapes. This is often a long and steady process: one sign at a time, one storefront at a time, one tree at a time.

If normal investment decisions to periodically renew the building fabric – both in downtowns and along highway strips – are channeled in a direction informed by the Town's or Village's long-term vision plan, the community can gradually re-make itself according to a mold of its own choosing, rather than continuing to drift in the unguided current of haphazard changes, resulting in a hodge-podge.

The three images below exemplify the kinds of positive change that occurs one building at a time, in downtowns and along gateway corridors leading into the community, where first impressions are instantly – and often indelibly -- created.



Façade Rehab, Jamestown



Parking Lot Screening, Ellicott



Two-story commercial bldg, Ellicott

Description of the Image Preference Survey Process, Its Results, and Their Significance

As part of the planning effort that went into the production of this guidelines booklet, an Image Preference Survey was conducted in October 2008, in association with the County *Comprehensive Plan* update.

At a well-advertised public meeting, images were displayed for approximately six seconds each, sufficient time for respondents to record their initial “gut” feeling about each photograph. Respondents were asked to rate each of 119 images on a 21-unit scale ranging from -10 (very negative) through zero (absolutely neutral) to +10 (very positive).

Images were divided into two broad categories, commercial/industrial and residential (single-family, two-family, and multi-family). Within each of these two broad categories, images were presented either totally randomly or in contrasting pairs (illustrating two different approaches for the same land-use), so that respondents could make direct comparisons more easily. Narration was brief, factual, and objective.

At the end of the evaluation session, score sheets were tallied, and the numerical scores for each image were averaged together, to create average scores. Several weeks later, at a follow-up meeting, the same 119 images were presented in the order of their average scores, ranging from highest to lowest.

The purpose of this sequencing is to inform all parties, involved in participating in the new County *Comprehensive Plan*, with solid information regarding the preferences expressed by the survey respondents. The kinds of buildings, signage, and landscaping that people rated lowest might be actively discouraged through new, locally-adopted and locally-administered design guidelines or standards. Conversely, the kinds of buildings, signage, and landscaping that people rated most highly could be actively encouraged through the same mechanism.

In order to help local officials set public policies in a manner consistent with their constituents’ desires, such information can be quite useful.

The following commentary describes some of the distinguishing characteristics of the images, those aspects that differentiate them for better or worse, as rated and scored by survey respondents.

Generally, the images in the Commercial/Industrial category which were rated highest exhibited the following characteristics: visual impact of parking minimized from the road through rear locations, plantings, stone walls, fences, etc.; non-generic buildings with traditional architecture; parking lots with many trees; shops arranged around “village green” open space; two-story “Main Street” building design with sidewalks and shade trees; signs made of wood rather than plastic, and low (“monument”) signs.

Rated lowest in the Commercial/Industrial category were roadside views dominated by large expanses of asphalt in parking visible from the street, sparse landscaping, few or no shade trees, boxy, flat-roofed buildings, cluttered signage, and tall pole-mounted signs.

In the Residential category, images rated highest were those showing homes fronting onto greens or backing onto open space, trails, streets lined with shade trees, modest front setbacks, cul-de-sac islands with trees, and streets of modest to moderate width. Rated lowest were images of neighborhoods without green spaces, streets without trees, streets that are very wide, and homes with visually prominent garage doors.

Readers interested in further details are referred to a separate publication entitled *Summary Analysis of Results: Image Preference Survey*, which includes a CD-ROM with all 119 images, sequenced in order of preference, from lowest to highest.



Highest-Scoring Commercial Images



Highest-Scoring Residential Images



Lowest-Scoring Commercial Images



Lowest-Scoring Residential Images

Commercial Area Considerations

Highway Commercial Corridors

Demolition: Perhaps the greatest opportunity offered by existing commercial strips which are lined with buildings that do not reinforce community character in a positive manner is that typically the vast majority have a design life of less than 25 years. Time is therefore on the side of progressive community leaders who can articulate a vision of what these corridors could look like. As each building is voluntarily replaced, often by new owners wishing to increase their economic return, with larger and more appealing premises, the character of the corridor is upgraded and improved. The discount food store pictured here is in the process of demolition, making way for something that

is potentially more in keeping with community character. The new two-story professional office built to reflect regional architectural traditions replaces a defunct gas station.

In Chautauqua County, the new Vineyard Discovery Center proposed in Ripley is slated to replace a defunct car dealership – which had been built (inexplicably) in the middle of a vineyard.

Without community design guidelines, officials in towns and villages are essentially participating in the “Vanna White School of Planning”, spinning the Wheel of Fortune and hoping that everything will come out well. It can also be likened to sailing around Chautauqua Lake without a rudder.



Old buildings come down....



Are there any speaking ways for the new.

Gateways and Centers

The sad fact of the matter is that many towns and villages have fine, distinguished centers, approached through gateway corridors totally unworthy of the great little downtowns they lead into. This pair from the Finger Lakes Region illustrates the unfortunate state of affairs many communities find themselves in today. After decades of careful attention and diligent effort to re-energize and beautify their commercial cores, visitors and residents alike continue to be prepared for the worst – not the best – after driving along the disappointing highway strips bracketing them on all sides. If the first impression created is the strongest, then such communities are seriously undercutting their own downtown initiatives by neglecting the quality of development (and re-development) lining these critical approach roads.



A typical gateway corridor unworthy of...



the fine historic town center it leads into.

Open Space as a Gateway Concept: One might consider using open space as a land-use tool to help generate positive attitudes toward your community, by working to incorporate such features into the planning of commercial (or mixed-use) developments at the edge of your town or village. This also helps to maintain the rural-urban distinction between settlements and the surrounding countryside. In Waitsfield VT, the scenic Rt. 100 corridor leading into the village was developed with a shopping center set well back from the highway. The grassy expanse, sometimes called a “foreground meadow”, actually serves a secondary function as the location for the underground septic drainfields. A third important function is to serve as the platform for weekly Farmers’ Markets. Note that the buildings were designed to reflect the rural barn-building tradition, with parking located discreetly behind them.

Also, signage higher than usually permitted was allowed in this case because it was applied to a faux silo designed for the express purpose of elevating the sign, making it more visible at its greater setback distance.

The birdseye perspective sketch shows a proposal for a new “Gateway Green” at the edge of Lenox MA, applying similar design principles to this rural tourist destination.



Credit: Dodson Associates, Ashfield, MA



Maximum Front Setback, Rear Parking: A more traditional town-like character is created when commercial retail and service buildings are situated at a modest distance from the street or road, as in historic town centers and along their historic approach roads. The two photos below are of the Mill Pond Shops along Rt. 9 leading into Framingham MA. In addition to the short front setback and rear parking, note how pre-existing trees were saved, and how the buildings offer a second story for office use, increasing the vibrancy of the area.



The below example marks the entrance to the village of Stone Ridge in the Town of Marbletown, along Route 201 in Ulster County. Although the front setback is generous, it has been landscaped in an informal, rural manner befitting the community, with all the parking space provided in the rear. The building design is vernacular and rustic, with massive chimneys and open front porches.



Light Industry Along the Gateway: In both of these instances, the buildings themselves are “Plain-Jane” industrial structures, quite basic and not particularly attractive in themselves. But what a huge difference is made by simply planting inexpensive, readily available, native specie white pine trees in front of one, which happens to be located alongside the highway that serves as the principal gateway from the Maine Turnpike into Sanford, ME. If initial impressions are indeed important, gateway properties are prime locations for creating the kind of image which leads visitors to form a positive or negative attitude toward your community, even before they enter the Main Street.



Municipal Shade Tree Planting Along Highway Corridor

It is quite remarkable how vast an improvement can be made just by planting shade trees along the roadside edge. The two photos shown here illustrate the results achieved by the City of Renton, WA, as a result of co-ordinated shade tree plantings along both sides of Rt. 900, as it passes through the community. This typical highway strip, with very basic buildings awaiting redevelopment, has been utterly transformed through this simple approach. Views of shops and signage from passing vehicles are not obstructed, as the trees are “limbed up” to about seven feet above ground level – plenty of room for motorists to see the buildings and to read the signs. The sooner that such planning schemes can be implemented, the greater the results will be, for the trees will continue growing as the land behind them awaits re-development, sometimes for years. This approach has been taken at the WCA Hospital in Jamestown, where a half-dozen shade trees were planted at the edge of vacant land prior to its later development for parking.

In this case, the City shouldered the expense, but in the Village of Honeoye Falls, near Rochester, the Village puts up one-third, which is equally matched by the property owner and local service organizations (such as Rotary, Kiwanis, Jaycees, etc.).



Highways Through Village Centers: Example from the Heartland

No trick photography here. This photographic pair was taken from exactly the same location standing on the border between Fairfax and Mariemont, Ohio, looking first westwards then eastwards along US Route 50. . One community clearly has not embraced design guidelines in its municipal toolbox, while the second photo clearly demonstrates the kinds of practical results attainable when one has a real vision of what the future should look like. Yes, even transcontinental federal highways can be boulevardized to calm traffic speed through villages, with residential uses (typically alley-loaded to avoid driveways entering the highway) on the outskirts, leading into the mixed-use core



Chains and Franchises

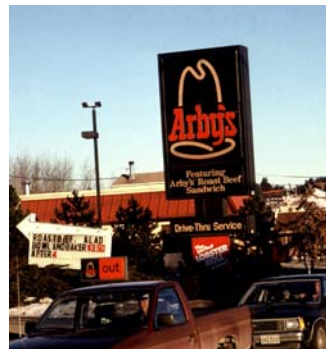
In the great majority of cases, local officials are simply not aware that reasonable design alternatives exist, and that their town or village is legally empowered * (by state enabling legislation) to adopt design standards (in design review codes, and visual appearance codes). Local businesses and corporations routinely comply, and the best standards are those which do not impose unreasonable additional costs on business owners. Fortunately, with some imagination and an open mind much can be accomplished, even with limited budgets.

McDonald's – Definitely Able to Adapt: Most national fast-food franchises will, if required by local regulations, abandon their standard design and erect buildings that fit more harmoniously into the local architectural context. Some will even re-use older structures, as McDonald's agreed to do in this example from the main street in Freeport Maine, where the new addition kept the lines and echoed the roof pitch of the original building, used the same siding, and maintained the window proportions. The architect deserves extra credit for patterning the sign on the shape of the classic gable-end, creating the only Greek Revival McDonald's sign in the world. The second floor is used for community meetings and the first floor has been restored to showcase two fireplaces and wood paneling. An entirely new McDonald's on the North Fork of Long Island demonstrates that the corporation is willing to create designs harmonizing with community character, when required to do so, by local ordinance standards.



In addition to rehabilitating older buildings with strong architectural character, McDonald's has built many new structures to fit comfortably within small town contexts, as this recent example from Laurel, NY (on Long Island's North Fork) illustrates. The building reflects the two-story clapboard style common in this area, complete with multiple dormers. Note the total absence of front parking, in spite of the deep, landscaped front yard.

Arby's: This was the first commercial building to be approved under Freeport's new Design Review ordinance. It is notable for its two stories, modest front setback, traditional white fence, retained shade tree, rear parking, and vernacular architectural styling. All of these design components are handled very differently with the corporation's standard model, also shown below.



Dunkin' Donuts: These two examples are located just five miles apart, and reflect different municipal codes, which in turn reflect different municipal philosophies regarding how best to govern. The philosophy of the community where the boxy standard-issue building is situated believes "the government that governs least governs best". The other town chose to establish community standards reflecting its own community values.



CVS: Again, these two contrasting examples illustrate the basic truth that “the choice is ours”. Whether we wish to tolerate uninspired, off-the-shelf designs, or whether we believe that the distinctive flavor of our unique community deserves something that responds more genuinely to vernacular building traditions, such as this Cape Cod style building on – Cape Cod.



Auto-Related Uses

Car Washes: Corporations are always willing to give us more of the “same old, same old”, but, honestly, how much more effort and cost does it involve to respect a locality’s wishes and values? In regions where pitched roofs and clapboard siding, with white trim-boards are the norm, does it show respect to introduce metal buildings with flat roofs? (Color is also an issue, with the boxy metal building painted fire-engine red, and the wooden building stained dove grey, regionally appropriate in coastal New England where this photo was taken.)



Auto Body Repair Shop: Sometimes the design solution is breath-takingly simple. In this case, the better-looking auto body repair shop was rotated 180 degrees so its large overhead doors and service bays face onto a rear asphalt pad. Otherwise, all that paving, the large doors, and the vehicles inside become part of the public viewed.



Car/Truck Sales Agency: All too often minimal requirements result in minimal attention to the kinds of common-sense improvements that make a car sale lot more attractive or less attractive. If the businessman's goal to attract customers, and if local officials' goals are to attract positive attention to their community, which example do you think succeeds most? Requiring adequate landscaping (not just a narrow grass strip and few token shrubs) is by no means unreasonable. Adding shade trees that will grow to 40 or 50 feet upon maturity adds needed verticality to the open expanse of car-lots, and does not deter sales, as this Honda dealership can testify.



Quick Lube: Even relatively small premises such as fast-lube facilities can contribute either positively or negatively to community character. In these two cases, the prominence of the garage doors is quite different: front-facing versus side-facing, onto a parking lot that is mostly screened from public view. The way in which the large asphalt aprons have been handled also makes a huge difference, visually speaking. Again, the solution is disarmingly simple: a relatively modest 42-inch high brick wall hides the necessary asphalt area from the street and ties in nicely with the masonry building itself. If concrete blocks were used, split-face aggregate blocks would provide a similarly attractive surface.



Muffler Repair: This is a second example where the large service bay doors have been situated to face the side lot line rather than the street – which is an excellent first step toward minimizing their visual impact. However, more could be done. Ironically the less inspiring example, in the very boxy, flat-roofed building, is located within the scenic Adirondack Park, while the nicer example, with pitched roof and dormers, is located in just another suburban community – but one where officials and residents cared enough to adopt a visual appearance code to protect its community character.



Gas Station Canopies: Canopy roofs can either be flat or pitched. Pitched canopies are actually superior – and perform better --in areas with high levels of rain and/or snow, for obvious reasons. The first gas station canopies, built in the 1920's were all pitched, reflecting the historic vernacular building patterns for homes and businesses at the time. The choice is clear. One fits in better with traditional buildings, the other does not.



Pump Location: It is only convention and habit that causes pumps to be located in front of gas stations. There is no physical need involved in this locational choice. As long as the premises are adequately signed, motorists will know that fuel is sold on the premises. Situating the pumps behind the building, as shown in this example along a rural highway in southern Rhode Island, works well for all parties involved, and helps preserve the traditional character of

this historic village of West Kingston. Communities unwilling to require that all pumps and canopies be located at the rear can structure their ordinances to incentivize better canopy design in front, allowing front locations *only* when canopies are built with pitched roofs and fully-recessed lighting fixtures. Standard canopies would be permitted, but only in rear locations.



Gas Price Signage: How large is big enough ... for motorists to read the numbers and make their decisions? Opinions must vary a lot, as sign sizes certainly do. Along town streets, county roads, and state highways, the relevant factor is posted travel speed. On open highways out in the countryside, there might be a greater argument for signs to be visible from afar, due to longer braking distances. But even then, there must be limits on sign size and height. As the contrasting example illustrates, low signs with smaller numbers are a distinct alternative, particularly when speed limits are 35 mph or lower. Such signs are often called “monument signs”, as opposed to “pole-mounted signs”.



Miscellaneous Retail and Services

Hardware Stores: This pair clearly shows that a relatively low cost entrance feature and related signage can transform a very basic, inexpensive metal building into that is much more in keeping with the rural, rustic vernacular typical of this north woods community. Often, better design solutions are attainable without greatly expanding the project budget. In the Ace hardware example, extending the building height allows businessmen to achieve a much larger sign display area (as an elevated wall sign) than would have been possible with a pole-mounted sign.



Self-Storage Facilities: These kinds of units are often very utilitarian in appearance and do not complement any town's traditional rural character. However, they can be constructed with an office building located in front, facing the public roadway, and presenting a finer face to the passing traffic. These two contrasting examples are located about 15 miles apart, along state highways in southern Rhode Island. The low native stone retaining wall in front of the shingle-style example adds a nice, completing touch. The plain metal building it hides can be seen to the extreme left of the frame.



Hair Salons:

The traditional look of this simple building, and its placement behind several mature shade trees, make all the difference. Note that the parking is to the side, not right out in front, where trees would have had to be cut down to make way for the asphalt – a very poor trade-off (spending additional money to remove a real tangible asset!).



Landscaping (Retaining Existing Trees): Developers, and their consulting engineers, routinely turn a blind eye to saving existing trees on their properties. partly because most local are entirely silent on the subject. But simple tree inventories (by specie and girth) would give everyone the *information* with which to make truly *informed* decisions as to which trees to cut and which to retain. Money really does grow on trees, as studies have shown that customers

spend more time and money in commercial areas that are attractive and inviting. These two Winn-Dixie grocery stores (the Wegman's of the South) graphically illustrate what is at stake. That the biggest of big-box firms can and do comply with local requests – when backed up by local regulations and requirements – is confirmed by the other three examples, from Home Depot, Lowe's and Wal-Mart.



Landscaping (Planting and Maintaining New Deciduous Canopy Trees) When sites are relatively bare, or when no outstanding trees exist, greener results can be achieved through strong tree planting requirements. Species that grow tall and spread generously over the surrounding asphalt should be specified, and certain species that are totally inappropriate should also be listed. Among the former would be native red maple, sycamore, white ash, red oak, pin oak, little-leaf linden. Among the latter are Bradford callery pear (splits very easily), silver maple (brittle limbs), ginkgo (smelly fruit), and Norway maple (becomes an invasive species in local forests). Such plantings eventually grow much taller than the single-story buildings that often occupy these sites, as can be seen in the first example below. Care must also be taken to ensure that shopping center owners do not subsequently “top” their shade trees. This kind of butchery greatly saps the vigor of trees and causes many of them to die prematurely. Tree protection ordinances can help prevent such catastrophes.





Planting Evergreen Trees: When a denser visual screen is desired, such as for multi-family construction along highways, evergreens are the preferred tree type. In this example from South Kingston RI, native cedars were transplanted from the open fields on the site where buildings and parking were slated to occur (using a large tree spade), and re-located out of harms-way along the highway edge. Unlike white pines, cedars do not lose their lower branches over time, thereby maintaining a solid, visual buffer. And unlike some exotic species, such as Scotch Pine and Austrian Pine, they live longer and are more resistant to disease and insect attack (such as have now made Canadian hemlock a poor long-term choice).



Landscaped Berms: Although this booklet generally discourages the use of roadside berms – on the basis that they are not a traditional feature of the rural or village landscape – there are occasional “exceptions which “prove the rule”. Such an exceptional case is the berm in Ellicott, on Rt. 60 leading into Jamestown, where a community of locust trees has been smartly planted atop the earthen mound, which itself visually buffers the otherwise uninspiring parking lot in front of a Bob Evans restaurant. When front parking is unavoidable, or as a technique to mitigate existing front parking areas, such berms are a design option worth considering. However, the need to plant proper shade trees (not simply shrubbery) remains imperative.

Alternatively, when commercial buildings are located close to the highway, with one side facing the highway and their front entrance facing onto a situated to one side of the building, as in this example from the Adirondacks, a landscaped berm can help soften both the large building (in this case a grocery) and the parking lot too. (Bob Evans, Jamestown, Lake Placid shopping center edge)



Stormwater Management Issues

“Rain Jails” versus Wildlife Ponds: For many decades, civil engineers have been trained to design stormwater management facilities for the sole purpose of accommodating runoff and holding it back for a number of hours (or days) so that it will be released downstream gradually, and only after peak stream flows have abated, to prevent flooding conditions. But stormwater basins can – and really should -- serve more functions than simply detaining runoff until peak runoff abates. Purely functional basins, designed for ultra-low maintenance, are often sterile in appearance, as is this stone-ringed “rain jail” from central Minnesota confirms. In contrast, the basin at the Home Depot in Wickford, RI functions as would a natural pond, providing wildlife cover and habitat for a variety of waterbirds, insects, reptiles, and amphibians. With shrubs and wildflowers ringing its edge, this habitat also deters bothersome Canada geese (which prefer grassy margins, where predators cannot hide.)



Rain Garden 1: However, stormwater, long regarded as a nuisance to be rid of ASAP, is actually a resource that should not be quickly disposed of. For example, with a bit of ingenuity, it can be used to irrigate parking lot plantings, relieving their great thirst in midsummer. Instead of perching plantings atop elevated islands circled by concrete curbs, as is the norm, they can be designed to gracefully absorb stormwater sheet-flow by grading the pavement down toward these features. Water flows into them through V-shaped notches in the curbing, and overflow (in times of huge inundation) is accommodated by drains raised above the garden level by several inches.



Rain Garden 2: Larger rain gardens can actually serve as attractive entry features, placed near ingress points to new developments, as this example demonstrates. The skills of an experienced landscape architect are highly recommended, to supplement the engineer's contribution. Use of native specie plants will help reduce maintenance, and a variety of plantings can provide seasonal color in the changing landscape (red-twig dogwood and winterberry are excellent choices for bright winter color in snow country, for example).



Incorporating Historic Buildings into Roadside Development: The stone barn pictured below has been re-cycled as retail space in the shopping center outside Philadelphia. The original farmhouse has also been put to new use as professional offices, similar to the way it was done in this second retail complex below, where a barn-like structure was constructed to reflect the overall shape and massing of the original barn.



In Chautauqua, the Red Brick Farm exemplifies what can be done to create a new retail business center in a rural location, incorporating the original farmhouse and some of its historic outbuildings with new construction designed to harmonize with the traditional architectural elements of the property. In addition, the plantings and general landscaping are truly impressive, including a most attractive garden adjacent to the parking lot.



Light Pollution (Dark Sky Issue)

Hooded Lamps: The natural darkness of night skies is imperiled almost everywhere, and the danger is almost never noticed until the damage has already been done. Rural areas have a special opportunity – and perhaps an obligation – to address this issue while it is still small. The costs of compliance are not great, and the design solutions are common-sensical and practical.

First, freestanding lights must always be covered on the top and on their sides, with hoods and shields extending below the luminaires to effectively cut off sideways radiance, eliminating glare spreading onto roads (a public safety issue) and onto nearby residential properties (a nuisance issue).

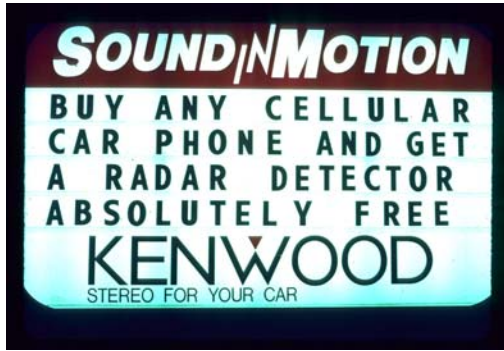


Gas Station Canopies (glare issue): Unshielded canopy lights create unnecessary and avoidable glare at night, spilling over onto adjacent roadways and properties. Yet again, very simple design modifications resolve the problem. One is to recess the lighting into the flat, horizontal canopy ceilings, rather than allowing lighting elements to protrude downward, unshielded. If this is not done, lighting can easily be shielded by vertical “cut-offs” in the

form of tall fascia boards wrapping the canopy edges (rustic logs in this rural example). A third approach is to design the canopy with a pitch roof with the ceiling parallel to the roof planes, as shown in the fourth photo.



Internally-Illuminated Signs: When plastic signs are lit from within, it matters a great deal whether the predominant color is light, such as white or yellow. Such signs with light background transmit a great degree of glare, and these overly-bright signs are actually more difficult (and painful) for drivers to read messages. However, dark backgrounds, such as black, navy blue, forest green, etc. provide excellent contrast to white or yellow lettering and symbols, and are much easier on the eyes. Merchants wanting to display signs with white or yellow backgrounds should be required to illuminate them externally, with spotlights from above, reducing glare and increasing legibility.



Downtown Considerations

Design Principles

“Build-to” Line: New buildings in downtown settings should generally sit at the outer edge of sidewalks, about six or eight feet back from the curb. This maintains the very traditional street edge that is so characteristic of authentic downtowns. Sometimes suburban setbacks are inappropriately required by zoning ordinances that have been lifted from other communities without a great deal of understanding regarding the kinds of impacts such regulations will actually have when implemented. It is also a common mistake to locate parking within the front setback. Curbside parking should be augmented by parking to the side or (preferably) rear.



Alcoves: In downtown settings, it is usually important to maintain the traditional “street line” where buildings are situated at or very close to the sidewalk edge. These two examples, one historic, the other contemporary, illustrate the exception that proves this particular rule. The use of “alcoves” provides an opportunity to punctuate the

streetscape with small courtyards, adding variety to the mix, and offering additional opportunities for landscaping and park benches.



Mixed Uses and Minimum Height: In both town centers and commercial corridors, it usually makes great sense to specify minimum building heights of 1.5 to two stories. Not only does this improve the appearance of the new construction, it also enables developers to utilize a second story, taking advantage of the same roof and foundation, increasing the building's efficiency and creating opportunities for rental income. In Davidson, NC, where the Town's codes prohibit new single-story buildings in the commercial center, CVS created office space on the second floor. In this urban renewal project in Springvale, Maine's village center, the second story is used for apartments.



Historic Building Rehabilitation

Inexpensive Fixes: Downtown settings offer special challenges and opportunities, to maintain consistency with the historic building fabric. The improvements to the shoe repair shop pictured below (which I personally prescribed and supervised) required just several buckets of paint and a very modest sign budget.



Historic Photos: When major renovations do occur, it is often very helpful to seek out and reference historic photographs. The current appearance of the building in the below example from Kennebunk, Maine, does not

slavishly copy the historic photo which was referenced, but is nevertheless faithful to it in terms of window proportions and trim elements.



If operating on a more modest budget, it is sometimes very surprising how much can be accomplished through repainting in a way that highlights historic architectural trim, as shown here. Windows that had been boarded up have been unboarded or replaced, and a tree has been planted in front.



Plywood Choices: Two extremely common mistakes when rebuilding storefronts is to use regular-grade exterior plywood instead of the only slightly more costly MDO board (for “medium density overlay”), and to sit the wooden elements directly on the concrete sidewalk. The MDO board is covered with a tough thin k layer of epoxy-saturated paper, and also makes excellent signs. It lasts up to 25 years, compared with a typical five-year failure rate for regular exterior plywood, whose surface readily weathers and cracks. Elevating the wooden elements by several inches above the sidewalk protects them from wet rot, and poured concrete mini-curbs being the modern equivalent of traditional granite plinths.



Transom Windows: Another common mistake is to cover the traditional transom windows that give historic storefronts their extra height. Even if the interior ceiling has been lowered (to save on heating bills), the transom window glass can be painted black on the inside to hide the hangers, etc. (This simple treatment blends in well with the appearance of the windows below, which often look very dark too.) When transoms are covered up as in the real estate office pictured here), an important building detail is lost, akin to shaving off one's eyebrows.



Industrial Park Site Design Choices

The three aerial perspective sketches shown below illustrate two contrasting alternative choices for laying out an industrial park estate on both the northern and southern sides of an existing east-west road. The first panel shows pre-development conditions, followed by the second panel illustrating a somewhat haphazard layout, which evolved as each building or pair of buildings was proposed. The third panel, however,



Credit: URI Co-operative Extension, and Dodson Associates, 2005 *A Creative Combination: Merging Alternative Wastewater Treatment with Smart Growth*.

was laid out according to a central organizing design principle, to deliberately locate the buildings in an orderly fashion, framing a central open space. This central “green” not only improves the aesthetics enormously, creating a highly desirable business location, but also provides an area for locating stormwater management areas such as “infiltration meadows” and subsurface septic drainfields. The fourth graphic in this series shows how such drainfields might be installed under the greenspace. The fifth photo illustrates how a very basic metal building can be adapted to blend harmoniously into the rural landscape. This is essentially one long very plain building, with a central section that has been slightly broadened and heightened, topped with a barn cupola. The final, sixth, photo illustrates a broad/shallow stormwater infiltration meadow, which could also become a landscape feature within the large central open space.



Minimum Building Height: Harley-Davidson's new building in Ellicott exemplifies what can be done to add quality to a commercial corridor with its multi-gabled second floor, enclosing an upper-level gallery or mezzanine where additional motorcycles are displayed. The second example is from the corridor leading into Iowa City, where this row of offices (below) and flats (above) sit behind the main retail buildings closer to the highway. An outdoor dining area, graced by a small fountain, lies behind the first row of buildings, in close proximity to the second. In both cases, the buildings conform to a design standard requiring a minimum height of two stories in new commercial development.



Multi-Level Buildings on Sloping Sites: When topography allows, taking advantage of sloping terrain can make enormous economic sense, as both floors become accessible at grade level. In this case, side parking serves the upper floor in front, and rear parking serves the lower floor in back.



Residential Area Considerations

Design Principles

Growing the Village 1:

This birdseye perspective sketch graphically depicts a natural, incremental approach to accommodating new development around the edges of a village or hamlet. The key strategy illustrated here is to “fill in and round out”, maintaining the historic community’s compact form, and avoiding leapfrog development in scattershot fashion throughout the rural countryside.



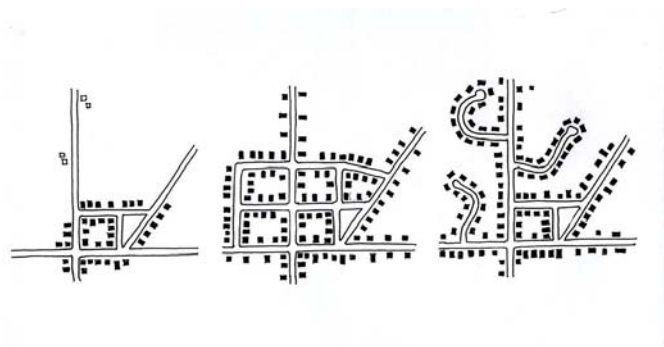
Growing the Village 2: These three panels illustrate the existing situation and two contrasting approaches to toward expanding a rural Pennsylvania village in a sensitive, incremental manner. While both include connected streets and important open space, one is faithful to the historic pattern of rectilinear streets and blocks, while the other incorporates a more curvilinear design approach. On relatively flat or unchallenging terrain, the former is advocated, to retain the community’s traditional aspect. However, if natural features such as slopes, draws, and other elements pose physical obstacles, a more relaxed layout is acceptable.



Varying the House-to-Street Orientation: In most cases, homes will continue to be oriented 90 degrees to the street. However, rather than having 100% of all new homes lined up like obedient soldiers standing at attention, a more pleasing result can be achieved by varying their angles, so they are not all perpendicular to the street. The photo and the sketch below illustrate this point nicely. Each group of four or six homes terminates with one built at a 30-degree angle to the street. When this is done on both sides of the street, the angled homes almost face each other, but the greatest advantage is that people travelling up and down the street occasionally see house fronts angled toward them, with a small green space between those angled fronts. (In this example, the developer left the same 70 feet between angled house fronts in his development as he found to exist between opposing house fronts on traditional streets in older villages in the area.)



Maintaining Traditional Street Patterns: It is important to adopt street design standards to ensure that developers do not needlessly fragment a community's rational network of interconnected streets by building dead-ends that are inherently less safe, providing only one point of access for emergency vehicles. This trio of sketches shows the difference between the recommended approach and a more common approach, when adding on to an existing hamlet or village. Through traffic can be thwarted by ensuring the connecting streets are specifically designed not to become short-cuts or thoroughfares, as shown below.



Modest Front Setbacks: When homes sit closer to the street, a more traditional neighborhood character is created (or re-inforced, when infilling). Inasmuch as front yards are rarely used, except for lawns and foundation landscaping, there is not much justification for pushing buildings back from the street, as most codes require today, unless the street is heavily-trafficked. On relatively quiet side streets, modest front setbacks provide the twin advantages of enlarging the more private back yard (where most family activities occur), and allowing for an easy conversational distance between pedestrians and folks sitting on front porches, as illustrated in these two photos taken on Cook Street in Jamestown.



Protruding Front Garages: When lots are less than 60 feet wide, builders often locate garages as appendages to the housefronts, with the result that protruding garage doors come to dominate the streetscape, defining the neighborhood in a distinctly non-traditional way. When lots are less than 40 feet wide, or when homes are horizontally attached to each other, the result is even more displeasing, as illustrated below, in what has been called the ultimate in “snout-house” design.



Accessing Homes via Back Lanes (or Alleys): One very traditional solution to this situation is to situate garages behind the homes, either facing forward (with long driveways to the street in front) or facing to the rear (with shorter driveways accessed via back lanes or alleys). Within the last fifteen years, there has been a resurgence of this design approach. Indeed, one might be excused for assuming that the homes pictured below are 75 to 125 years old. Good design is truly timeless, and there is a growing desire among many homebuyers to live in new neighborhoods with authentic traditional small town character. Developers have increasingly found this to be true, and have also discovered that building less-wide homes on less-wide lots saves them money and enables them to deliver new homes at more affordable price-points. It is very important that shade trees be planted along back lanes or alleys, creating accessways that become more attractive as the trees mature.

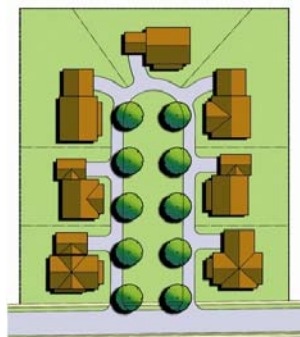
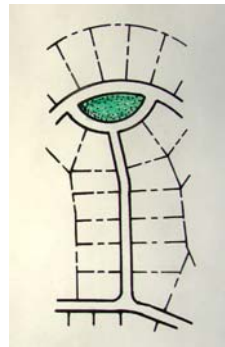
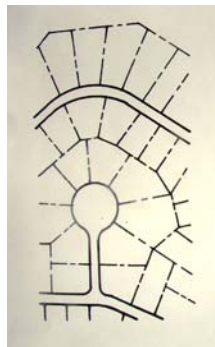


Invisible Affordable Housing: A clever and effective way to add affordable “workforce” housing into existing communities is to permit – even encourage – accessory dwelling units (ADUs). More commonly known as “granny flats”, these are small self-contained residential units which sometimes occupy a second floor or small wing of a house. Because they are just a section of an otherwise single-family dwelling, they are usually invisible to the untrained eye, and blend extremely well into the surrounding neighborhood. They provide rental housing for a wide range of people, from college students to young couples to singles (including those recently divorced or widowed).

In the example to the left below, rental income from the new unit constructed behind the main house paid for that addition and also for the new two-car garage within eight years. In the other example, a second-story unit was created above the garage at the rear end of the building.



Crescents and Closes: Two positive alternatives to the typical cul-de-sac are illustrated here. One substitutes a crescent and short connecting street for the more typical dead-end with large asphalt bulb. The small green in the crescent can also serve as a “rain garden” (see Fig __) and an attractive planting island, with shade trees branching out to fill the “celestial space” above it. This island also serves as a greener “terminal vista”, enhancing the streetscape as seen from approaching vehicles.

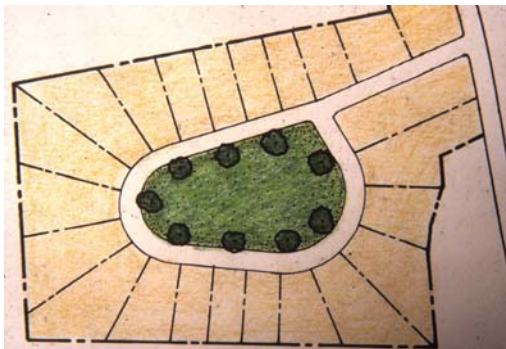


The second alternative is really an elongated version of the crescent, where the central island becomes a small linear park. This approach, called a “close”, can also be described as a “boulevard cul-de-sac”. It consists of two lanes separated by a green area, rather than be a painted white line. This is essentially a one-way loop, with the turning radius equal to or greater than that normally provided in cul-de-sacs, generous enough to accommodate moving vans

and fire engines. If the central island is slightly lower than the surrounding lanes, and if the pavement is sloped inward to the center, this small park can serve as a “rain garden” and be planted with shrubs and trees that enjoy additional moisture (such as native rhododendron, viburnum, native red maples, and sycamores).



Greenlets and Greens: Providing multiple small “greenlets” can alleviate the monotony of standard suburban development patterns. Some of these are variations mid-way between crescents and closes, bounded by one-way looping streets (or common driveways). Larger greens, such as this historic one from Cobleskill in Schoharie County, can also function like a large-cul-de-sac island, with one-way traffic flowing around it. (The developer adapted it from a pre-existing pony track on the former estate where it is located). A second historic example, from Narberth, PA, includes two small crescents springing off from the main loop. In both cases, driveway access to the homes on the smaller crescents is *via* common driveways at the rear lot lines.



“Attached Greens”: The innovative concept of homes fronting directly onto greenspace, as illustrated in the two crescents at Narbrook Park (above), is shown below in full flower, as it were, in this example from Michigan. With rear garages accessed by back lanes, homes have an immediate relationship with the open space, enhancing livability – and marketability. The local fire officials, who reviewed this design proposal before it was approved,

were satisfied they could reach houses better than in conventional subdivisions, as they could approach from both front and back. Even attached or multi-family units can be positioned in this manner, right at the edge of the neighborhood green in front, separated from it by only a sidewalk.



Positioning Greenspace in Visually Prominent Locations: A highly effective technique for increasing the visibility of limited greenspace is to position it as “terminal vistas”. Examples include locations at the ends of streets, where they “T” into another street. The greenspace could take the form of a neighborhood green reached by a street or streets approaching it at a 45 degree angle, as shown below. Or it could consist of parkland or a conservation area situated along the *outside* edge of a curving street – where it is more visible than it would be if located along the inside edge of such a curve.





Traffic Calming: One very attractive way to slow traffic in residential neighborhoods is to introduce small greens bounded by two streets ending in "T" intersections, as depicted here. Approaching vehicles must come to a full stop or decrease their speed significantly in order to negotiate the right-angle turns that have been deliberately introduced into this street pattern. This simple design technique is far more effective than posting speed limit signs, or installing annoying speed bumps. The example below is from a conservation subdivision I designed in Mendon, called "Mendon Green".

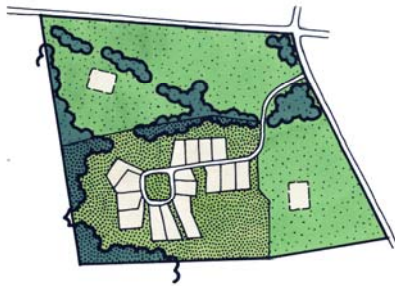


"Hedgerow Medians": Where farm fields are divided by hedgerows, such features of the agrarian landscape can easily be conserved, adding more value to the resulting neighborhood development, as shown in the accompanying line drawing. These two photographic examples show a single line of hardwoods in one boulevard setting, and a double row with a small stream running down the middle. The latter turned out to be so outstanding that the developer made it one of his principal entrances.

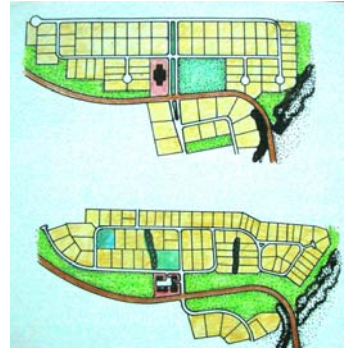




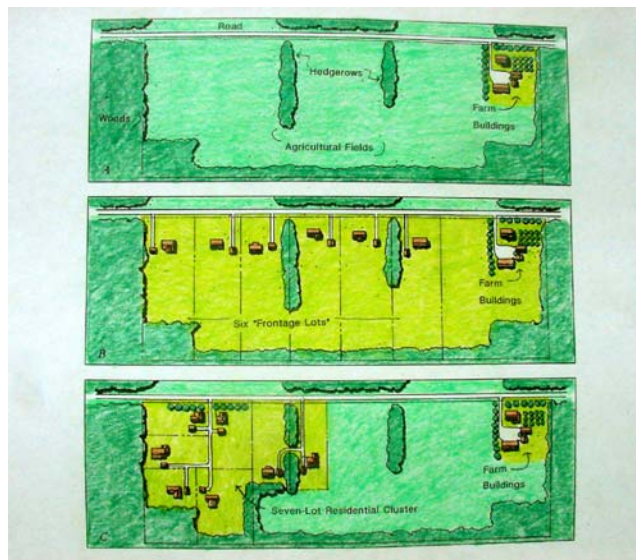
Preserving Roadside Vistas: Two related methods of protecting scenic views from rural roads share the common goal of ensuring the roadside is not cluttered with homes that suburbanize the view. In the first example, the existing country roads are bordered by two large “conservancy lots” (typically 15 to 20 acres) which support small-scale farming operations, and which also buffer the small-lot hamlet development situated in the interior of the parcel. Each of these “country properties” could be permitted to have up to two small “accessory dwelling units”, such as a tenant cottage or granny flat, but the farm lot itself could not be further subdivided. This would constitute private, *non-common* open space, in contrast to the common open space within the heart of the development, serving residents of the smaller lots.



The second approach, known as “foreground meadows”, offers a vast improvement in the way homes are often stretched out along existing country roads. Because of the well-known safety hazard posed by multiple driveway entrances onto such thoroughfares, many local regulations prohibit such “stripping” of the road frontage. The typical response by developers is to build homes facing onto internal streets, with their rear elevations backing up to those country roads, creating an extremely unsightly result sometimes referred to as “the Fanny-first School of Design” (butt-ugly by definition). Fortunately, that sad result can be easily avoided, simply by following the “foreground meadow” design approach illustrated here. The cost of this approach does not increase the developer’s costs, as the length of new street construction remains the same. This example is an apples-for-apples comparison, as the number of lots, size of lots, width of lots, and percentage of open space are all equal to more standard developments where the private, back sides of the houses are on view to people passing by on the road.



Improving Roadside Houselot Development: When rural landowners need cash, they often carve lots out of their road frontage. An alternative to stripping the entire frontage with standard-sized lots is to adapt the conservation design principle of trimming lot size and width, resulting in the same number of homes accommodated on half the available land. This would enable some homes to be set back from the road on deeper driveways, either individual or shared, secluding them from the passing traffic and improving their livability. This approach also enables half of the farm frontage to remain open. Towns wishing to formalize such an approach might consider adopting a “Road Access Control Ordinance”, limiting future driveway curb-cuts to just two, one for each common driveway or access lane.



Basins for More than Merely Water: With the ability to provide significant open space by trimming lot sizes (particularly widths), comes the opportunity to replace relatively deep stormwater basins (sometimes resembling impact craters) with much broader – and shallower -- meadows, and even informal playfields. Increased horizontal “floor” of the enlarged basins, which provide equal capacity with far less excavation and grading. These areas, when skillfully executed, blend right in with the natural landscape contours, and are nearly invisible to the untrained eye as stormwater management facilities. They can be mowed with ease due to their extremely gentle side slopes, which makes them well-adapted for either informal recreational play areas (tossing Frisbees, flying kites, playing catch, etc.), or for wildflower meadows. Their gentle slopes allow them to be mowed just once yearly with large machinery (usually after wildflower seeds have set), reducing maintenance costs, and providing an attractive habitat for birds, insects, and small mammals.



Shade Trees Along Streets: Local planning boards are often asked to waive standard shade tree planting requirements and the results are significant on many levels. Streets without consistent shade tree planting are more barren, hotter, appreciate less in real estate value, and tend not to calm traffic speed. Streets where shade trees have been planted at regular intervals on both sides are cooler, more attractive to residents and potential buyers, provide more varied habitat and tend to calm traffic speeds. Property values tend to be appreciably higher on well-treed streets, such as Third Street in Jamestown.



Cul-de-Sacs: Choices also exist with regard to how the turning areas at the ends of cul-de-sacs can be designed. They are often paved over completely, actually making it more time-consuming to remove snow (with many back-and-forth parallel movements by plow operators), or they can become attractive visual end-points, which are easy to navigate around when built with the proper turning radius.



Sidewalks: The results of decisions to waive subdivision sidewalk requirements have implications for the families and seniors living in those new neighborhoods. We can either provide safe off-street paths for children on foot or tricycle, parents pushing prams or pulling wagons, and empty-nesters or retired folks or we can effectively force them into travel lanes where they must compete for limited space and be forced to breathe the noxious fumes of cars,

SUVs, pick-ups, and other trucks. Increased incidence of obesity among children could be mitigated by providing sidewalks that encourage children to walk to school, playgrounds, the library, etc.

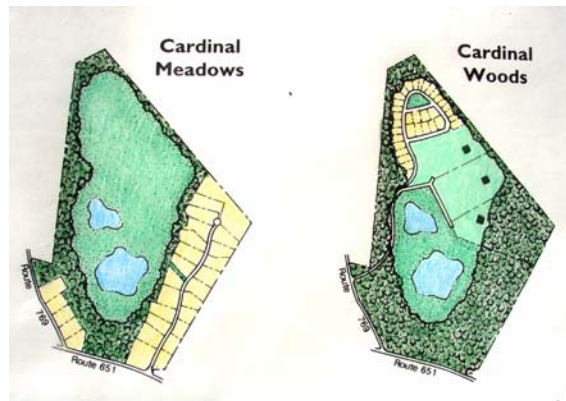


Street Pavement Width: Many local subdivision ordinances contain outdated standards for street width, based on standards originally promulgated by the American Association of State Highway Transportation Officials. Experience has shown that highway engineers are not the most appropriate group to write standard for local residential streets, and that wider streets are often 30-50% more expensive for towns and villages to re-pave. Not to mention the increased travel speeds they encourage, and the documented corresponding increase in accidents occurring on them. Safer standards for local streets are published by the American Society of Civil Engineers, in its book entitled *Residential Streets*.



Woodland *versus* Farmland Protection

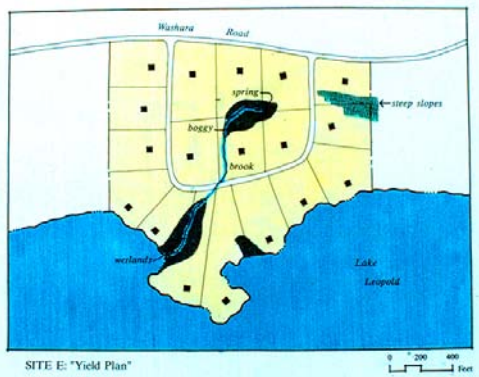
These two images illustrate two contrasting approaches to conservation design. When farmland and rural character are the primary objectives, siting homes in the woodland makes sense. However, when conserving woodlands, wildlife habitat, water quality, and aquifer re charge issues are of greater concern, a layout minimizing forest disturbance is generally preferred. Note the three large “conservancy lots” in the woodland conservation alternative, an example of “non-common” open space, full protected via permanent conservation easements. This approach provides developers with greater revenue, and reduces the acreage of open space for which the homeowner association is responsible, benefitting everyone.



Lakefront Development Issues: Although most of the lake frontage in the County has been developed, some unbuilt parcels do remain, particularly along Lake Erie, and increased setbacks and tree removal restrictions could be adopted, similar to the statewide “Shoreland Zoning” adopted in Maine and New Hampshire in the 1970s and 1980s. For properties that already have houses on them, owners could be encouraged to plant deciduous trees with limbs pruned up so that the foliage would not interfere with water views, as seen from their lawns and decks. The two aerial photos illustrate very contrasting development approaches. The third photo shows the differences that result from that total clearing (on the left) versus selective tree removal can make (on the right), while still providing enjoyable prospects of the lake.



The two contrasting images below illustrate the basic differences between conventional platting and conservation design. The standard layout contains seven lakefront lots, but the conservation design features nine waterview lots. The latter provides a greenbelt along the entire lakefront, with trails leading to the neighborhood beach. The conservation design also protects a roadside buffer and the whole interior meadow, which becomes a neighborhood recreation area with a ballfield and picnic facilities.



Conventional Development Pattern:
Entirely Houselots and Streets



Conservation Design:
Homes in a Lakefront Park

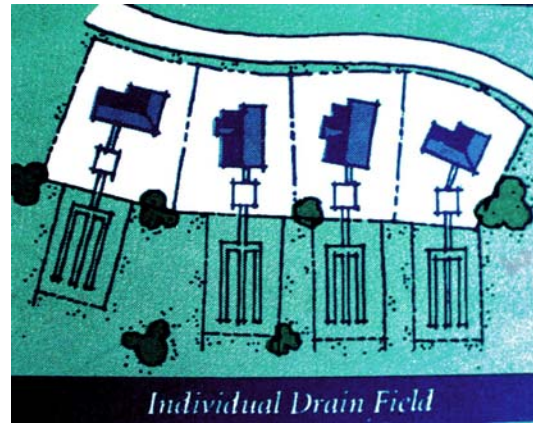
Locating Individual Septic Drainfields within Conservation Areas: One of the most valuable tools in the conservation design toolbox is the freedom to situate individual septic system drainfields outside the narrow confines of individual lots. This freedom allows site designers to skillfully place drainfields on the very best soils available on the property, those that are deepest, driest, and best-drained. As anyone familiar with soil knows very well, soil conditions can (and often do) vary significantly across any given property. It simply makes NO sense at all to design as if this reality does not exist, and pretend that it quite alright to create new neighborhoods where some lots encompass (or consume) the totality of the best soils, while other lots must make-do with soils that are either mediocre or downright marginal, just barely managing to pass the absolute minimum requirements of the state or county. That is exactly what happens in conventional subdivisions, where there is no flexibility to enable more intelligent design.

Although it has long been accepted that community drainfields may be located within the common open space, in many municipalities no thought has been given to locating individual drainfields there. The distinction is hugely important, because community systems are rarely proposed, due the much longer time period for agency review and approval, not to mention the far greater up-front costs to the developer, who must construct a much larger infrastructure component from the very beginning, before even one houselot has been sold.

For individual systems in the conservation areas to become accepted as standard practice, certain legal and maintenance issues need to be addressed, and they are not difficult to deal with. First, the drainfield locations must accurately be identified on the approved Final Plan, and easements permitting this use of the common area must become part of the final approval process. Next, the responsibility for the drainfields should reside with the individual lot owners, although responsibility for pumping individual septic tanks (located on each lot, near the homes they serve) should lie with the homeowner association. (Pumping these tanks every three to five years greatly extends drainfield life, something that rarely occurs in conventional subdivisions.)

Although there are a great many advantages to this approach, it becomes an essential design component when creating conservation subdivisions in unserviced areas zoned at one-acre density. This is because it is not possible to reduce lots to one-half acre (to achieve 50% open space, e.g.) and still have sufficient room on them to locate a house, a well, a septic tank, and a drainfield.

The accompanying graphics illustrate how concept works. In the first figure, 11 of the 18 houses are served by off-lot drainfields, depicted here as tiny squares within the open space. The land surface above these drainfields can be managed either as mown turf (such as for neighborhood greens and informal playingfields), or conservation meadows mown once annually, usually in early November after wildflower seeds have set – which is the case in the photographic example here.



Conservation Subdivision Design: Recommended Procedures

A Constructive Critique of Outmoded Subdivision Ordinance Provisions

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, and stormwater management) and a few mundane but rather unimportant points (street frontage, lot-line setbacks, lot area).

The sad reality is that most towns do not require subdivisions to consist of anything more than houselots, streets, and drains. 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 five fundamental flaws, which are reflected in flawed designs.

a. The first flaw is that most local ordinances fail to require 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 parcel’s surrounding context.

b. Most municipalities do not require Planning Board members to walk the land, essential to understanding any property, at any time during the process, and

c. They also fail to involve abutters in the process until 95% of the work has been completed, which is both insulting and counter-productive.

d. Many codes typically require highly detailed design drawings at the so-called *Preliminary Plan* stage, involving developer expenditures of tens of thousands of dollars, as the very first submission. It is understandable, given the financial risk involved under these circumstances, why developers tend to submit the least innovative plans. Understandably, developers are not inclined to discard such plans, even when better ways to design the developer are pointed out to them.

Layouts are typically prepared by people trained in recording site data and in street and drainage issues (surveyors and engineers), but who have little or no expertise in the field of landscape architecture or in neighborhood design that capitalizes on the significant physical, historic and environmental features of each property.

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* as the first layout document, and
- (4) require that these *Sketch Plans* be prepared by a landscape architect or physical planner or at the very least that someone with these skills be a part of the team creating the concept plan.

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, saving the Town, property owners and abutters valuable time, money and effort.

Based on the work I have done over the past thirty years, the reforms which I recommend often begin with updating local subdivision regulations to include the above-mentioned items, 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 topo 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 view shed can be identified.

Regarding locations of specific features (including trees), the use of GPS (Global Positioning Systems) 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, etc.

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. 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 ballfields.

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 taken. I have found that abutters greatly appreciate being included from the outset, and 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 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.

Not attending a site walk is to rely entirely on a two-dimensional abstraction, black lines on white paper, and makes as little sense as hiring someone on the basis of a resume only, without an interview. No local official would ever consider such an approach to filling a vacancy, but they routinely fail to walk project sites to fully understand development proposals that will change the land forever.

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. to provide the applicant with an opportunity to receive critical input before he/she prepares the 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 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 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 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 Plan* should dovetail and not intrude upon with the resources documented on the *ER/SA Plan*. This section of the code should also provide the criteria the staff and Board members need to properly evaluate the *Sketch Plan*. The review process for *Sketch 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 LA 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 preparing the substantially-engineered drawing that typically constitutes the *Preliminary Plan*. Many municipalities make the HUGE mistake of establishing procedures requiring applicants to submit highly-detailed, so-called "Preliminary Plans" as the first document that staff and officials see. This puts the cart way before the horse, and is akin to bringing a diamond ring on one's first date. (In fact, most "Preliminary Plans" cost applicants five times more than a basic diamond ring.) 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 money is spent on engineering.

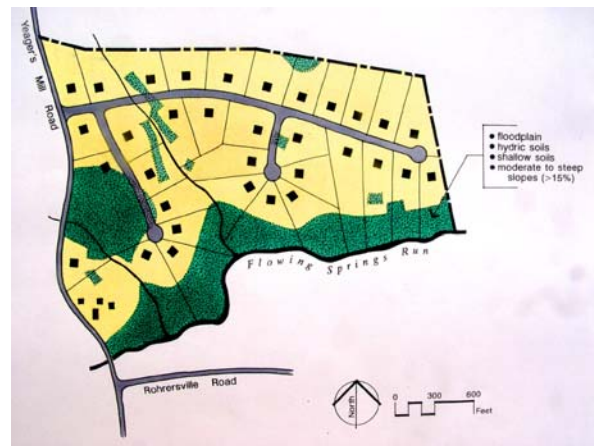
e. Four-Step Design Approach: I believe that the most effective methodology for producing conservation subdivision layouts that are responsive to the site and which preserve value-adding features, begins by determining the open space as the first step. If this is done, and if the regulations also require 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.

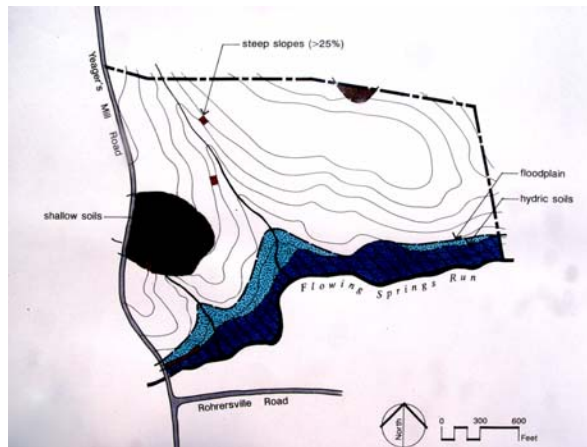
The third step involves "connecting the dots" by aligning the streets and trails to serve the new homes. Drawing in the lot lines, Step Four, is the least significant part of the process.



Site before Development



Yield Plan



Step One, Part One: Primary Conservation Areas



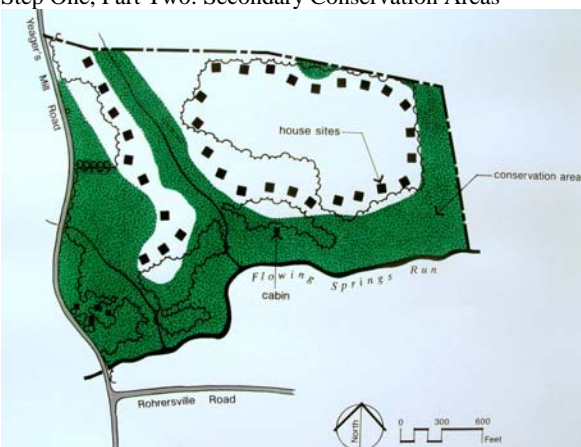
Site Walk: Primary Conservation Areas



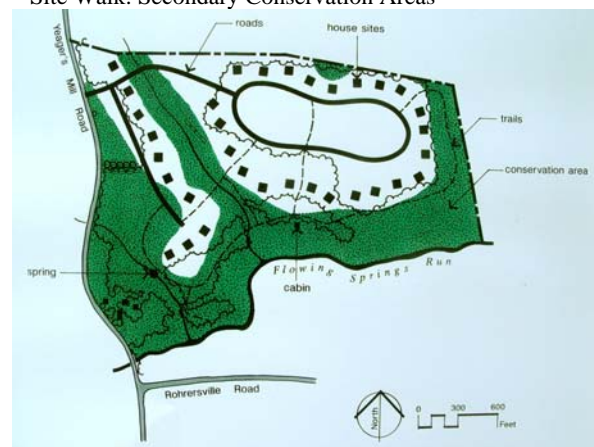
Step One, Part Two: Secondary Conservation Areas



Site Walk: Secondary Conservation Areas



Step Two: Locating House Sites



Step Three: Aligning Streets and Trails



Step Four: Drawing in the Lot Lines



Birdseye Perspective: Conventional Layout



Birdseye Perspective: Conservation Design



Birdseye Detail: Conventional Layout



Birdseye Detail: Conservation Design

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 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, as well as in the quality of the resulting layout of conservation areas, houselots, and streets.

In Chautauqua County, local officials and residents participated in a conservation design residential training on October 15, 2008. Following the slide lecture, participants hypothetically laid out a new rural neighborhood applying the four-step design process described above. Pictured here are (from l to r) Don McCord, County Planning Director, Christine Kinn, County Planning GIS Specialist; Dou Bowen (seated); Randy Woodbury, Ellicott CEO; Kim Sherwood, Randall Arendt, Sally Martinez, Bill Boria (seated), and Laura Damon.



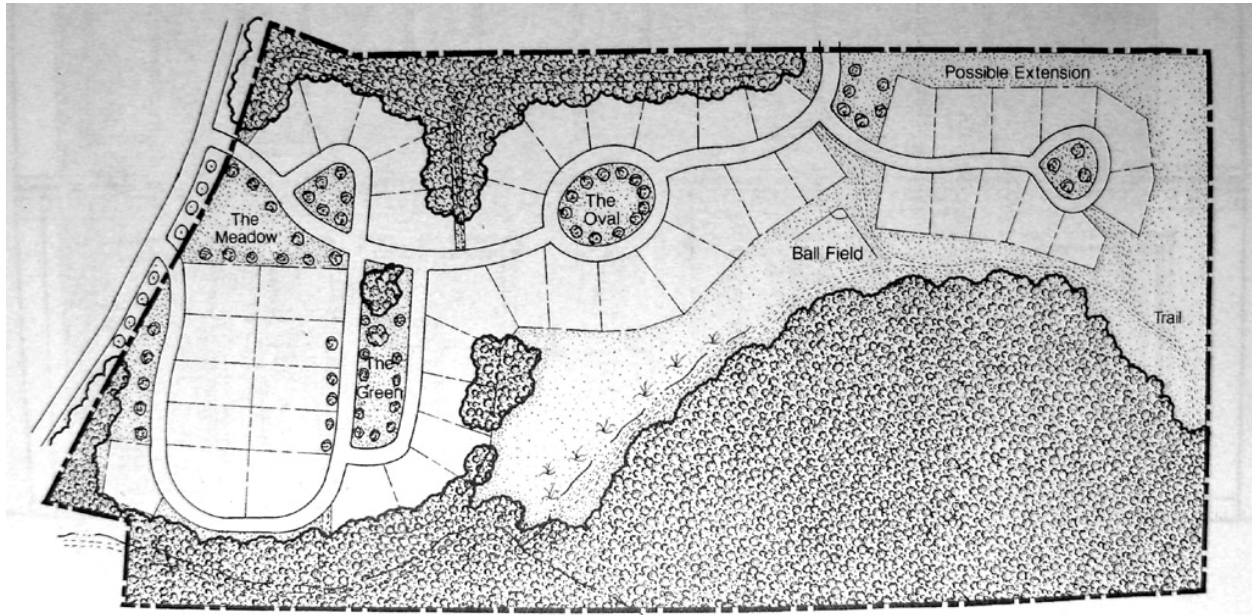
Applying Conservation Design Principles to a Site in Franklinville, NY: Mt. Pleasant Commons

Several years ago I was asked by the Town of Franklinville, in Cattaraugus County, to lay out a conservation subdivision on land which was being transferred from the industrial development authority to the Town (because its terrain and hillside location did not lend itself to industrial use). Following the four-step design process described above, I worked with Professor Gary Day of SUNY Buffalo and several of his students, in addition to the Zoning Board Chair. We all walked the property with the site analysis base maps in hand (previously prepared by the students, showing topography, vegetation, and soils).

After the site walk and discussion of the property's inherent constraints and opportunities, I sketched a tentative layout of conservation areas, house positions, streets/trails, and lot lines, in that order, for review by all parties involved. I then prepared a second layout, incorporating ideas and suggestions received from these team members. The resulting neighborhood design, called Mt. Pleasant Commons is shown here and is intended to serve as a model for the region, as well as being a specific design for this particular property.

A noteworthy aspect of the design process was the idea, early on, to protect the rural views from the road as much as possible by creating a "foreground meadow" and ensuring that the first tier of homes would all face toward the front of the property so the view into the parcel from Mt. Pleasant Road would not be dominated by relatively unattractive rear elevations (sliding glass doors, pressure-treated decks, etc.). The next design decision was to designate the first small plateau, with its large trees, as a neighborhood green, and to access this by a road traversing the property along the contour lines, to minimize the cost of cutting and filling. Another small common is proposed to be created in the next phase as well, and this one will have an oval shape modeled on the historic oval green in the center of Franklinville.

All lots are to be served by public water and sewer, and they all back up to or face onto permanent open space, through which will wind a network of trails linking this neighborhood with the village Center and also with Cass Lake. The trails will also link residents with a neighborhood ballfield.



Demonstration Sites within the County

Two sites were selected by the Chautauqua County Industrial Development Authority to demonstrate the planning and design principles described and illustrated in this guidebook: one industrial, the other retail/offices. They are meant to be illustrative examples, providing potential ideas and conceptual guidance to landowners, developers, business people, and local officials.

Westfield Business Park

At the request of the Westfield Development Corporation, I visited their future Business Park site, located along the south side of the NY State Thruway, north of a freight line, and east of Persons Road, which provides the principal road access. The site is well-suited for industrial development, not only because of its road and rail access, but also because it is relatively flat and possesses no wetland or floodplain constraints. The site is mostly wooded, with small pockets of field and meadow, plus several acres of vineyard.

The four-step design approach described elsewhere in this booklet was employed to help create a plan balancing development and conservation goals. This process begins with a delineation of the lands to be conserved: those areas containing natural or cultural resources which are significant or noteworthy and deserving of preservation. To identify which areas of the woodlands were the most significant (in terms of tree maturity, species diversity, and age distribution), aerial photographs from 40 to 50 years ago were consulted. The current woodland area that appeared as forest in those early photos provides a reliable indicator of which trees to hug and which to let go. Tracing the boundaries of those early, older woodlands pared back the total forest by nearly 50%, revealing those locations where industry could be sited without sacrificing environmental resources worth keeping.

The small vineyard visible from Persons Road constitutes part of the cultural landscape of the region, one that is a central part of the County's agricultural heritage. It was therefore decided to save this cultural aspect of the property, and to utilize it as an attractive entry feature along a loop road serving Phase I of the project. Areas for stormwater detention basins and rain-gardens were also identified in logical locations near the low-lying woodlands. Building footprints and parking lots were extrapolated from actual industrial building projects completed by the Chautauqua County Industrial Development Authority. The second phase extends eastwards into the center of the property, and affords several opportunities for railway sidings serving these premises.

Because the existing parcel boundary lines do not match up well with the best opportunities for development and conservation, it is proposed that the various landowners pool their land resources together to participate in the more beneficial layout illustrated here. This approach is known as a “landowner compact”. Each participant derives a proportionate share of the net project proceeds, based on the percentage of total acreage his parcel comprises of the total Industrial Park area.



Conceptual Sketch of Potential Layout for Development and Conservation within the Westfield Business Park

Ellicott Highway Corridor “Business Park”

The second demonstration site focuses on a stretch of State Route 394 in Ellicott, between the Interstate access and the bridge over Cassadaga Creek. This highway segment has not yet been overly commercialized and therefore offers a relatively clean slate on which to suggest a possible approach for ordering new growth in that prime area.

The conceptual sketch shown here simply illustrates one potential way of developing these properties, in a manner consistent with “best practices” in the world of progressive land-use planning. This layout does NOT constitute an official recommendation from either the County or the municipality, but is offered instead as a way of demonstrating how these properties could be developed, in accordance with the design guidelines contained in this booklet.

Those design principles pertain to retaining notable historic buildings and mature trees, locating new businesses relatively close to the highway, reducing the massing of buildings by modulating the front façade, creating alcoves for additional landscaping in front of certain buildings, situating parking principally to the side and rear of those premises, planting shade trees along the highway and throughout the parking lots, and handling stormwater through various infiltration techniques.

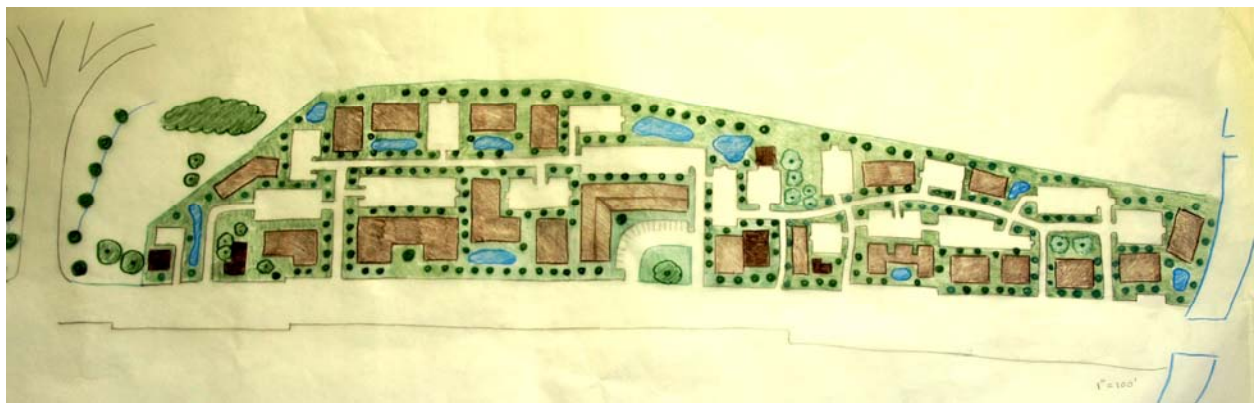
Several buildings are recommended to be kept, including the Peterson family farmhouse, the “ForCon” (Forestry Consultants) business premises, and a mid-19th century home built in the vernacular style, with traditional windows, front porch, stone foundations, etc. The two homes could be converted into professional offices, as a way of preserving a link to the Town’s historic past.

A number of mature trees were similarly identified as being worthy of preservation, as they would undoubtedly add considerable value to the resulting retail and office mixed-use development. With the exception of one building, which has been set back to preserve a huge black walnut tree along the highway, all the new buildings are proposed to be situated in the traditional (pre-1950) manner, relatively close to the public thoroughfare, with parking generally in the rear, in lots linked together by a common rear drive.

Shade trees are proposed to be planted at 40-foot intervals throughout, not only along Rt. 394, but also around buildings, parking lots, and the interior access roads.

Stormwater is to be managed *via* a combination of “rain gardens” (landscaped areas engineered for subsurface infiltration) and large conservation meadows in existing low-lying areas (which could be managed for wildlife, planted with native grasses and wildflowers, and mown annually, typically in late autumn).

This conceptual approach could also be used as a template for similar Business Parks elsewhere, such as in undeveloped areas near other Interstate exits in the County. In addition, the general design principles illustrated here could be applied along existing commercial strips, such as the one in Falconer, as they re-develop.



Conceptual Sketch of Potential Development Layout, Illustrating Progressive Design Principles, Rt. 394, Ellicott



Original Farmhouse with Mature Evergreens



Vernacular Style House



Very Large Black Walnut Tree

Southern Tier Brewery

In addition to the two demonstration sites described above, I agreed to provide supplemental guidance for a project already underway, in terms of its engineering drawings.

The new facilities for Southern Tier Brewing occupy a site in the Stoneman Industrial Park operated by the Chautauqua County Industrial Development Authority, in the Town of Busti.

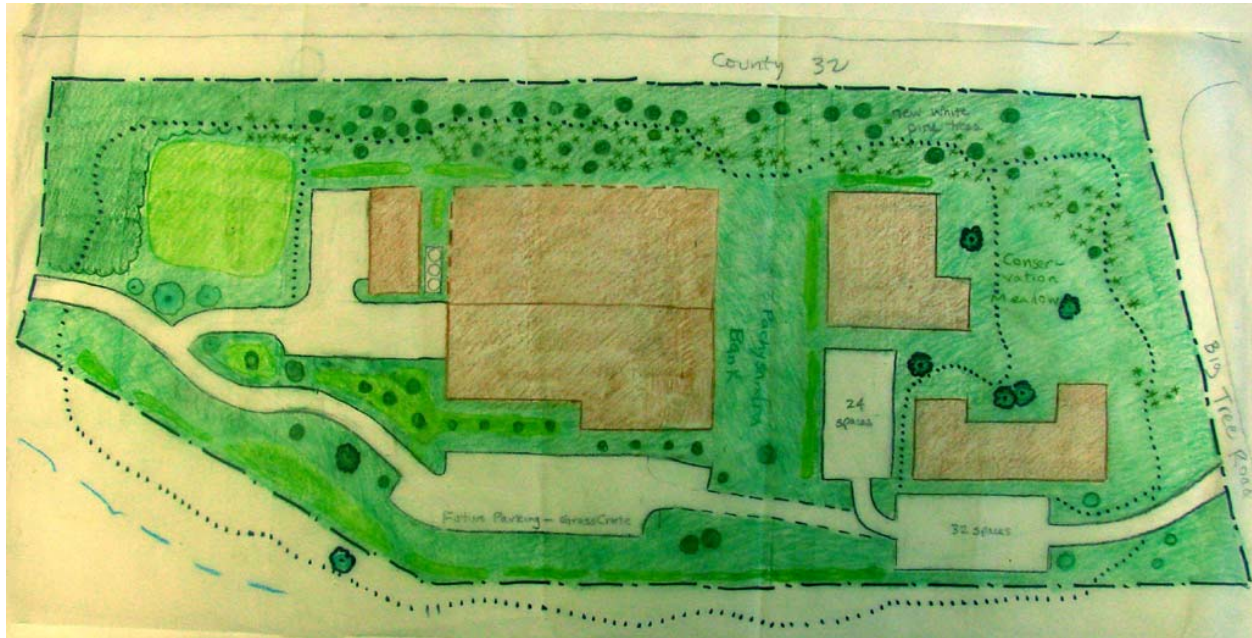
When walking the site with the owner, an opportunity was recognized to create an attractive “conservation meadow” at the highly visible corner of Hunt Road and Big Tree Road. By shifting the proposed location of a large stockpile of earthen material (taken from the brewery building pad and parking lot) from the center of that open space to an alternative location several hundred feet away, four or five large deciduous trees in the middle of the meadow could be saved and designed around.

Planting ideas for this upper meadow area include native grasses (such as broomsedge) and wildflowers (such as daisies, Brown-eyed Susan, milkweed, Queen Ann’s Lace, chicory, etc.).

It was also recommended that the existing evergreen roadside buffer be inter-planted with new white pine and field cedar, everywhere that gaps and openings exist, as the existing pines are a non-native specie that is in decline.

A simple walking trail was also proposed, to be located in and amongst these evergreens and across the upper meadow, threading through the red-twig dogwood shrubs on the adjacent property, parallel to and perhaps about 60 feet back from the drainage channel.

Finally, it was advised that the depth of the proposed detention basin might be lessened by intercepting the building and parking lot run-off in “rain gardens” and infiltration trenches (basically long trenches dug with a backhoe and backfilled with gravel) – two progressive and environmentally superior techniques specifically recommended by NY DEC.



Conceptual Sketch of Potential Layout for New Southern Tier Brewery Site, Stoneman Industrial Park, Busti

End Note: Where to Go from Here?

As brevity is a virtue -- and as the “meat” of this booklet is in the preceding sections -- the only thing that remains to be said is that the kinds of changes and improvements illustrated here will not happen on their own, and in any sustained way, without some effort by local residents and officials to add certain planning and design guidelines to their current ordinances. The choice is continued “business as usual”, *versus* something different, something better, something more in keeping with the character of our communities. The choice is yours, at the local level, not the State’s, not the County’s. Each town and village can decide what it wants to become, based on its own values and goals.

When making the case for updating current codes, the results of the *Image Preference Survey* could prove to be helpful, as the conclusions from that exercise are quite clear, in terms of what most respondents did and did not prefer, regarding the appearance of new development.

As you go forward, please remember to make the process of code updating as inclusive as possible, to hear the best ideas, and to build the broadest public support. Godspeed, and good luck.

Further Reading

Readers interested in learning more about the planning and design approaches described and illustrated in this guidebook are referred to several volumes by Randall Arendt: *Rural by Design: Maintaining Small Town Character* (American Planning Association, 1994), *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks* (Island Press, 1996), its sequel *Growing Greener: Putting Conservation into Local Plans and Ordinances* (Island Press, 1999), and *Crossroads, Hamlet, Village, Town: Design Characteristics of Traditional Neighborhoods, Old and New* (American Planning Association Planning Advisory Service, 2004). 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). In addition, many free downloadable articles can be found at Randall Arendt's website (www.greenerprospects.com) and at the website of LandChoices, a nonprofit specializing in advocacy of conservation subdivisions (www.landchoices.org).