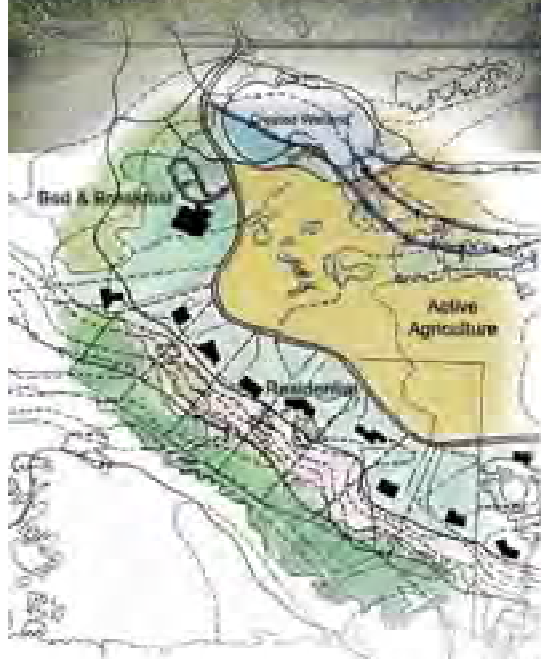


# The Rural Design Workbook:

*Rethinking conventional development*

A showroom of creative design solutions for real properties that protect and preserve the rural environment, with strategies, funding sources, and ideas that can make it work for you and your community.



Southern Tier Central Regional Planning & Development Board  
September 2002

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*Production:* Denis J. Chagnon, Landscape Architectural Consultant.

# Introduction

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## *Welcome to the Rural Design Workbook!*

This workbook is an easy-to-use collection of real-life development designs and recommended land use language for use by municipal planning boards as they review subdivision and site plan proposals. It has been developed by the Southern Tier Central Regional Planning and Development Board in conjunction with classes in Cornell University's Landscape Architecture program, and emphasizes design which promotes environmental health and conservation, preserves the rural character, and provides financial benefits or alternatives.

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## *Audience and Goals of the Workbook:*

This workbook is targeted at everyone involved in the planning and development process in rural land. Its goals are as follows:

- To use actual sites as examples of good design which is economically beneficial to the owner but protects the environment and water quality.
- To help landowners take advantage of environmental cost share and tax incentive programs which may make it "worth their while" to try a different approach to developing their land.
- To inspire local developers to design creatively.
- To give local planning boards the confidence to ask for (and get!) good design for their communities.

## *Organization of the Workbook:*

**CHAPTER 1** looks at the problems facing rural communities which are in the process of development; the ecological impacts, the loss of rural character, and the other consequences of the typical design approach will be addressed.

**CHAPTER 2** describes the four step "conservation subdivision" process and the tools that planning boards and landowners need to develop a creative and sound design.

**CHAPTER 3** lists the environmental stewardship cost share programs and other financial incentives to protect the land and water, and to promote better design.

**CHAPTERS 4 AND ON** are filled with examples of these principles and programs in action, based on real properties, noting benefits and cautions to keep in mind. Each chapter takes on a real property, performs a quick analysis of the site, and then looks at various student proposals for developing that land and the potential benefits of each.

The Appendices include the background of this Workbook and further information and definitions.

**APPENDIX A: HISTORY OF THE WORKBOOK** describes the development of this publication, including how we found willing landowners to work with the Cornell University School of Landscape Architecture, how the work was accomplished, and how area board members and developers responded to the Rural Design Showcase Presentations held at the end of each Rural Design Clinic.

**APPENDIX B: OBTAINING MORE INFORMATION** includes contact addresses or numbers for obtaining further information on each of the programs and incentives listed in the earlier chapters.

**APPENDIX C: BETTER SITE DESIGN REPRINT** contains a portion of a detailed analysis of open space design, reprinted with the permission of the Center for Watershed Protection.

**APPENDIX D: PAINTED POST'S SUBDIVISION LAW** is a portion of the subdivision regulations enacted by the Village of Painted Post, and is provided as an example of how design guidelines such as those proposed in the Workbook can be codified.

**APPENDIX E: DEFINING A STREAMBANK** explains what is meant, officially, by the term "streambank" in the context of the programs detailed in the Workbook, and gives a visual diagram of the extents of a bank.

**APPENDIX F: RIPARIAN BUFFERS** contains a portion of the Chesapeake Bay Program's "Riparian Forest Buffers," discussing these important transitional areas.

The workbook is designed in a modular, easily-expanded and easily-updated format. As new study sites are tackled or new funding sources become available, we will periodically release additional materials, which can then simply be added to the appropriate sections of the workbook.

We hope you use this booklet often. Direct landowners and developers to go on line at to get their own copies through the STC website ([www.stcplanning.org](http://www.stcplanning.org)). And please let us know if there is useful information which we have overlooked.



# 1: Why Do We Need Better Design?

## *Planning for the Future:*

Whether we're excited about growth or not, the fact remains that like many other regions in the country, **the Southern Tier is changing**. The region lost 55,000 acres of farmland in the decade between 1987 and 1997 to development or abandonment. Changing economic bases are bringing with them new residents and threatening our rural regions with suburbanization. With development comes an increased dependence on clean water resources, but also an increased hazard to them.

We couldn't stop this growth completely, even if we wanted to. But, as we all know, growth isn't a bad thing, on its own terms. An expanded residential and commercial sector increases the tax base of the community. A larger population encourages diversity and community. Businesses bring jobs to the region. **The problem we face isn't one of growth, but of the potential consequences** of how we choose to accommodate that growth.

Most of those moving into rural regions in the Southern Tier express an interest in the "rural quality of life." As communities, landowners, developers, and planners, **we need to take steps to ensure that those qualities are preserved**. Frequently, however, zoning codes and design habits do little to help this. By rethinking our approach, we can save money, preserve the environment, protect farming as an industry which gives our region its flavor, and ensure that the "rural quality of life" will continue. **A fresh approach to planning which encourages better design** - that's what we mean by "Planning for the Future."

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## *What's Wrong With Traditional Design?*

The standard approach to developing, for example, a 100-acre former farm parcel into a residential subdivision has typically been to divide the land into about 50 parcels of about 2 acres each - the maximum density usually allowed under current zoning. These parcels generally end up evenly spaced, and laid out on the land with no consideration of what's currently underneath. Not only does this frequently lead to drainage problems, expensive woodland clearing, and an unappealing overall "sameness" to the subdivision, it also destroys wildlife habitat, endangers stream corridors and aquifers, increases runoff and damage to infrastructure, and simply feels out of place in an otherwise rural setting.

Yet, this is the approach that, while they don't explicitly encourage it, our current zoning codes seem to suggest. The problem is that the vast majority of rural communities have zoning ordinances which are based on a single model - one developed decades ago for suburban communities. **What's needed is a new model:** one that protects greenspace and wildlife habitat, encourages the preservation of farming, and enhances rather than detracts from the unique character of our region. The next chapter presents one possibility for that in detail, and explores variations on it that individual communities might make.

## *The Goals of Good Design:*

- **To save taxpayers' money.** Our highway crews and Soil and Water District staff have better things to do than fix damage to streams and public property which could have been avoided in the first place. Chemung, Steuben, and Schuyler Counties have spent thousands of dollars fixing roads and bridges damaged by flash flooding and stormwater runoff. Some of this increase can be attributed to uncontrolled large lot housing developments on the steeper slopes, adding driveways and grading land, changing drainage patterns and increasing water levels. More thoughtful housing layouts can prevent this!
- **To maintain the rural quality of life.** An overwhelming number of rural residents want to “protect the rural way of life” when asked in surveys as part of the master planning process: 81% in Hornby, 95% in Lindley, 96% in Caton. 78% of Erwin residents surveyed wanted zoning laws changed to protect open space and scenic views, and 66% of them are willing to pay for land or easements to preserve these qualities. There is clear support for fitting new homes and businesses into the landscape without destroying it for everyone else. Sensitively designed development can do this!
- **To protect stream corridors and watersheds.** Idyllic streams with a heron at every bend come to mind in the picture of a rural scene. Shaded, vegetated stream corridors are necessary to maintain stable stream banks, and to moderate water temperature, protecting fish and wildlife. Development too often clears these “buffers,” degrading water quality and disrupting wildlife. Homeowners can still enjoy the sparkle of a brook or pond without water in their basements if good design methods are employed!
- **To keep farmers in business.** What would the “rural way of life” be without farmland? But farmers often need more income than their crops or animals can produce, and too many sell their land to pay the taxes. As mentioned above, our region has lost a substantial chunk of its farmland in recent years, and each encroaching development that conflicts with farming makes it more difficult for those who remain. Mixed-use designs, which plan for and incorporate agriculture into the overall picture for the area (or within the development), and alternative development strategies, such as easements or conservation-minded design, can be the “nest egg” that farmers need to keep their best land in production while capitalizing on the value of their other land for development.
- **To make financial sense.** All the good intentions in the world aren't always enough to overcome the “bottom line,” and the first impression of many developers is that conservation-minded design is a tradeoff of financial value. The facts, however, are that when properly planned and executed, it isn't a financial loss at all; frequently, it can result in a substantial gain. Homes in conservation subdivisions, studies have shown, appreciate in value faster than those in conventional subdivisions, and there is often little or no relation between lot size and price; the *quality* of the space and the views and amenities surrounding the site (and protected by good design) are often worth far more than the land itself.

Further, economic benefits can be realized from the very beginnings of a project: numerous sources of funding and incentives exist which can encourage good design; roadway and infrastructure costs are often lowered or better shared; and the resources needed to start the process are cheap - a roll of tracing paper and a pen, a site survey which is needed anyhow, and information which is available and free to the public, as you'll see.

## 2: Conservation Design Method

### *Promoting Good Design:*

As mentioned in the last chapter, the traditional method for subdivision design is typically to commission or otherwise obtain a survey of the property boundaries of the site, divide the land into evenly-sized lots, plunk in a few roads to access those lots if needed, and then attempt to site homes on them as best as possible. Sometimes one lot has several terrific options for home sites while the lots around it are forced to settle for the best of a set of poor options. This often results in drainage issues, unsuitable house sites, removal of forests, hedgerows, and other unique features, or overwhelmingly uninspiring, cookie-cutter, lifeless developments. The reason for this is that **the traditional approach has its priorities wrong**, and does the step which should be first - setting aside land and picking house sites - last, and the step which should be last - laying out lots - the traditional method does first.

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### *Do It Backward - Randall Arendt's Approach:*

Randall Arendt is a planner, site designer, writer, speaker, and advocate for conservation-minded planning. His methods have been developed over the years, and he has become known for his clear writing, practical approach, and accessible diagrams and drawings which illustrate his points. In his *Growing Greener Workbook* and other works (see Appendix B), Arendt lays out a process which approaches design the other way around, which he refers to as "**Conservation Subdivision Design**."

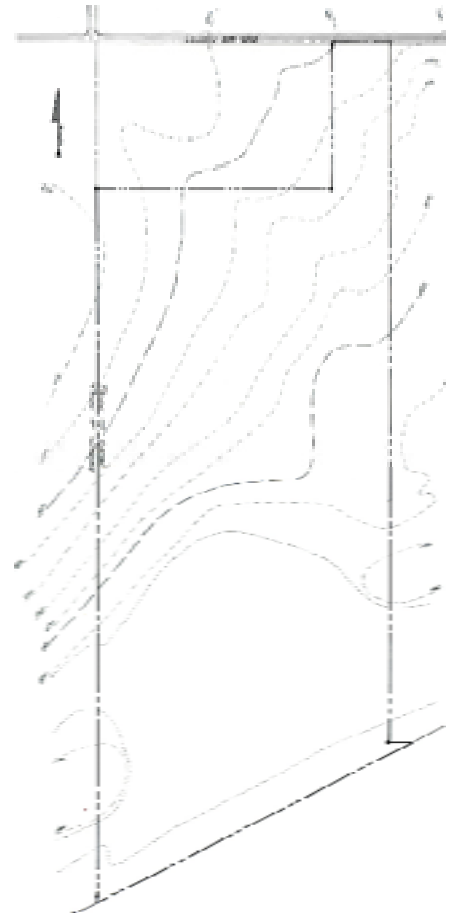
This process begins with **an extensive analysis and mapping of the site** - done in a straightforward manner with easily accessible tools and resources. A good design begins with a solid understanding of the site. From there, the four-step process is the reverse of the traditional development model. Instead of the last step, **the first step is to set aside land for conservation and protection**. This, then, is not the "leftovers", but the land that most deeply influences the character of the site and gives it its character. **Once that has been determined, houses are sited** - not merely in the best choice possible within a constrained lot which has already been laid out, but on the best locations over the whole of the site. Only after there are homes to access are roads drawn in, cutting down on unnecessary road length and allowing the subdivision to be **designed as a neighborhood** rather than a group of homes. Finally, instead of the first step as it often is in a traditional development, **the last step is to divide the land into parcels**, in a way that makes sense with the rest of development and conserves land.

This approach provides an exemplary model for a better design process in a simple, easy to remember form: when it comes to design, take the traditional method and "Do It Backwards." In the following pages, we'll **demonstrate that process** with an individual site: the Lonny DeWalt property.

## *The DeWalt Property - A Case Study:*

Lonny DeWalt's property of about 60 acres is an interesting site and a terrific opportunity to demonstrate Conservation Subdivision Design. The site, in the town of Caton at the Lindley border, contains a large portion of the roughly 25-acre Spencer-Martin Wetland, a prime wildlife habitat located at the headwaters of several watersheds.

The wetlands has been incorporated into the New York State Open Space Plan for protection, and a local group had expressed an interest in purchasing the whole property if available. Knowing that they may not be able to raise the money to afford the entire parcel, we wanted to work out a plan which allowed some homes onto the site in order to make some money for DeWalt while still allowing public access to the wetland and preserving a large enough upland buffer to protect the area. In addition, DeWalt is a minister, and expressed a desire to set aside a parcel of the land for a church retreat, in a secluded lot near the wetland but also separated somewhat from the proposed homes.



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## Preparation: Site Analysis

### Overview:

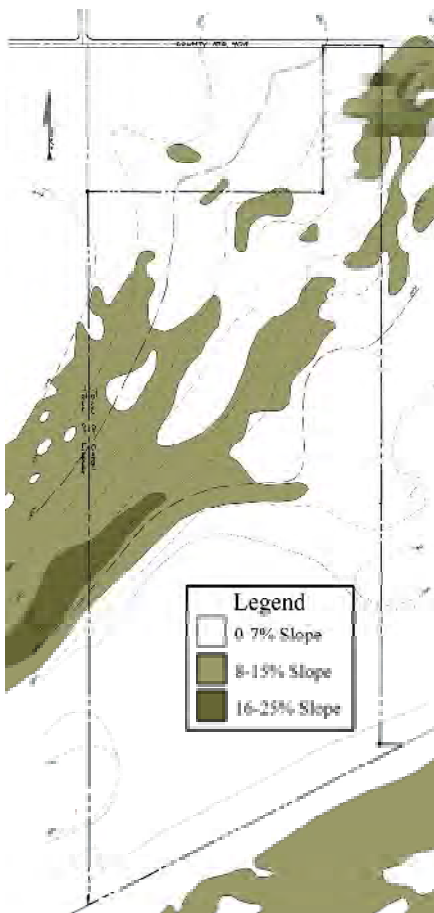
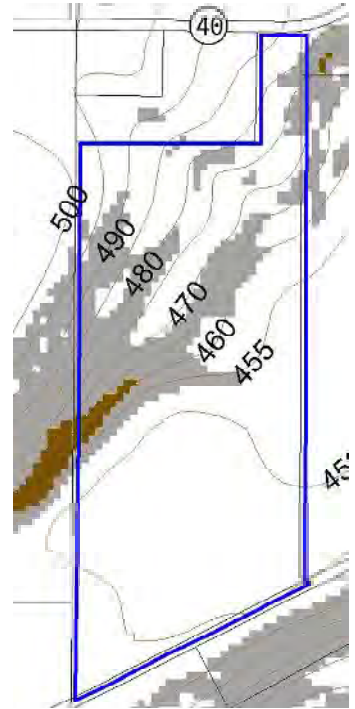
A good design needs to come from a solid foundation, and that foundation is **a knowledge of the site**. After all, you can't know where the best sites for placing the houses are if you don't know what makes them good or bad. There's a lot more that should go into this step than simply the site survey typically required under current zoning; you'll want to look at slopes, at aerial photographs, at soil characteristics, and at the unique qualities of the site itself. Before that sounds too daunting, however, rest assured - it doesn't cost an arm and a leg. **In fact, it likely won't cost a dime!**

All of the resources we're about to use in this example are **free or affordable and available to the public**. Contact the STCRPDB if you need help accessing them. The easiest way to handle these maps is to simply copy them onto tracing paper; this makes them easy to overlay, compare, and interpret.

## Slopes:

On its own, a contour map can be difficult to read if you're not used to it. In addition, what's most important isn't how high the land is (well, except where floodplain issues are a concern), but **how steeply it's sloping**. Steeper slopes are more prone to be unstable when disturbed by development, create drainage and grading issues when siting homes, and are more expensive to build on. Thus, an important step in site analysis is to map the slopes.

A GIS (Geographic Information System) program provides a useful tool for this, and a printout such as the example shown (right) makes a good starting point for a slope map, but you can also create one yourself by **measuring distances between contours**. Generally, a slope up to 7 feet vertically in 100 feet horizontally (or 7%) is considered well-suited for development. Slopes from 8% to 15% are less optimal but developable if needed (for comparison, a typical handicapped-access ramp in a building is just over 8%). Areas from 16% to 25% are marginal at best and should be avoided if at all possible, especially when they are currently wooded - the potential for erosion is too great. And lastly, slopes over 25% (1 foot vertically per 4 feet horizontally) **should be avoided under any circumstances**. These divisions are the ones used in the mapping in this book.



The GIS map is a good starting point, but its contours are in metric units (at least, in this case) and the slopes are rather blocky. Fortunately, since slopes are merely a proportion (of rise to run), the metric units don't change the slope. What we need to do, then, is (as shown, left) trace the blocks and smooth them out. And there you have it - a map of the sloped areas.

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## Soils:

It's generally a good idea to obtain a soils map as well, and copy it onto a tracing-paper overlay. What's primarily important here isn't the names of the soil groups (though those might be worth recording), but the information in the index of soil types regarding **what type of development and use (agricultural, drainage, stability, etc) the soil is suited to**.

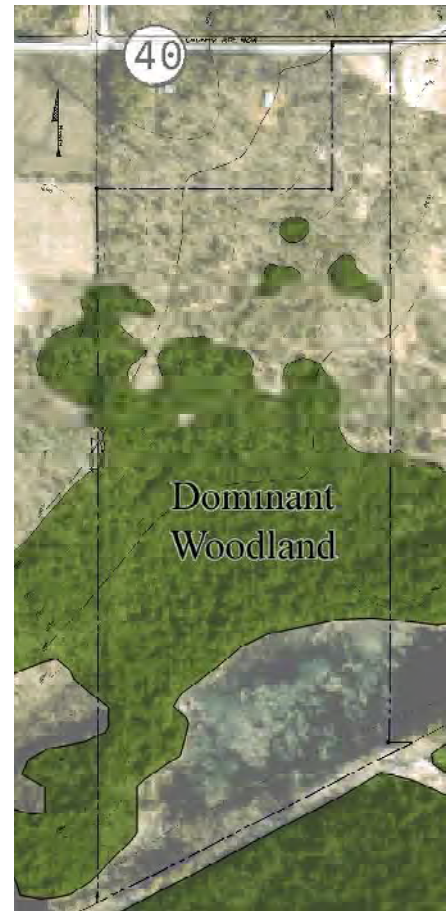
In the case of the DeWalt site, no particular constraints to development were found except the extensive wetland, and erodibility issues in the steeper area in the woodland (already reflected in the slope map). Since no agricultural use is intended for the site post-development (the limited former farmland is the part slated for use), an extensive analysis of soil qualities for agriculture wasn't merited.

## Aerial Photography:

GIS is able to combine an aerial photograph (which are available through public databases) with a site boundary, as demonstrated at right. **Aerial photographs are done to a particular scale** and can be measured and drawn upon just like a map, so if GIS isn't an option, you can also perform this step yourself by measuring from identifiable landmarks.

You can use an aerial photograph to help **denote particular features which might not show up on a survey otherwise** - the precise locations of hedgerows, the edges of woodland, the layout of farmed fields, the course of a stream, an existing but unsurveyed farm road which could be improved, and more. These should also be **supplemented by notes and observations from walking the site itself**, noting things that may not be apparent from the air. Trace any of these features which are important to the site onto your overlays - you'll want to know how they relate to other features.

In the case of the DeWalt site, as shown here, the primary feature of note is the **current extent of the wooded areas** (shaded over the photo, right). There are no intact hedgerows remaining, nor are there any apparent stream corridors or other noteworthy features.



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## Other Issues:

Be sure to **note anything else of particular importance** to the site's development on some or all of your overlays, as well - you'll want to know any particular peculiarities of drainage, etc, as well as the character of surrounding areas. Perhaps views are of particular importance to the site's character, or wind direction and solar orientation may be critical factors in your design. **Whatever it is, make note of it** somewhere in your mapping.

In the case of the DeWalt site, the major factor is the Spencer-Martin Wetland. It is about 25 acres, the majority of it on-site, and is listed by NYSDEC as a Class II wetland. It was listed in the NYS Open Space Plan 2001. The wetland is located in the headwaters of several watersheds: the northern portion drains into Barnard Creek and the southern end drains into Ryers Creek. Ecologically, the wetland includes open water, emergent vegetation surrounded by a former pasture, and northern hardwood forest. Ducks, geese, herons and beaver make the wetland their home. Both the wetland itself, and a buffer area around it, are critical factors in any design for the site.

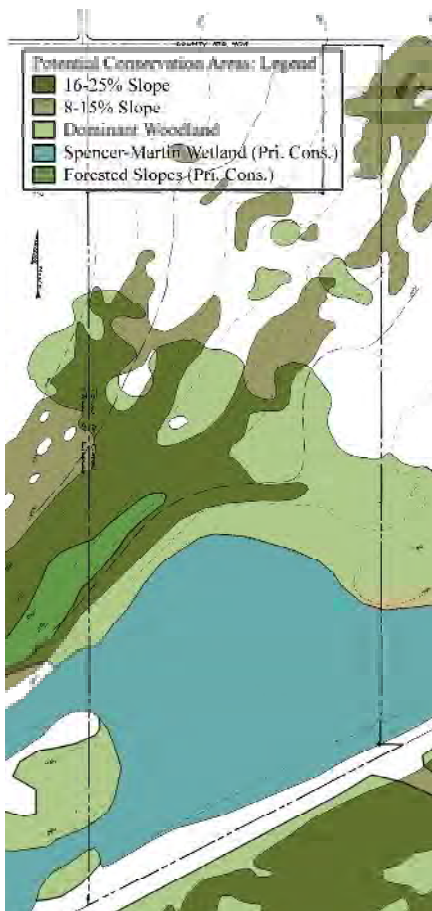
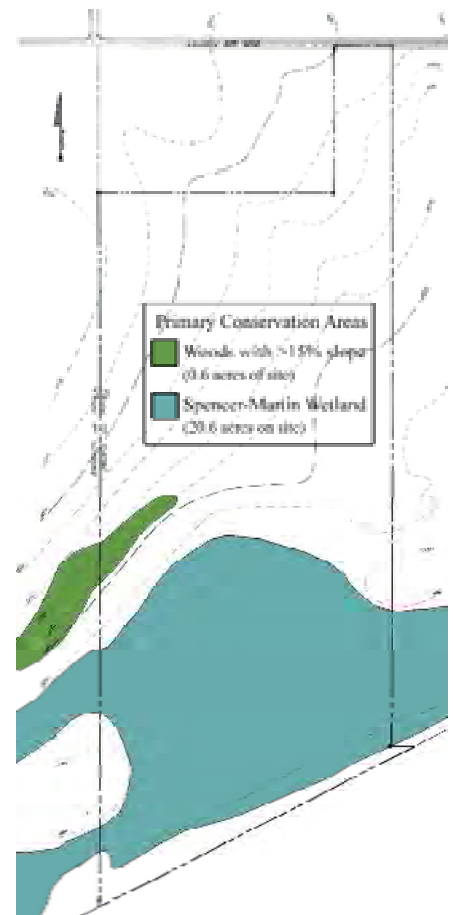


## Step One: Define Conservation Areas

Once these maps have been completed, the next step is to use them to **identify primary and secondary conservation lands**. This is done, typically, by overlaying the maps created earlier and "drawing up" the important features of them to provide a map which combines all the aspects.

**Primary conservation lands are those which are ecologically or otherwise sensitive, and cannot or should not be built upon** - wetlands, land that is part of a waterbody, land within the 100-year floodplain, extreme slopes, soils prone to slumping, and wooded sloped areas prone to erosion when developed. These areas, in Arendt's process, are **removed from consideration** when discussing the buildable acreage of the site.

In the case of the DeWalt site, as shown (right), the Spencer-Martin Wetland and the area of steeply-sloped, wooded terrain have been set aside as Primary Conservation areas. These two areas total about 21.2 acres on site, and bring the buildable acreage of the site down to about 37.5 acres.



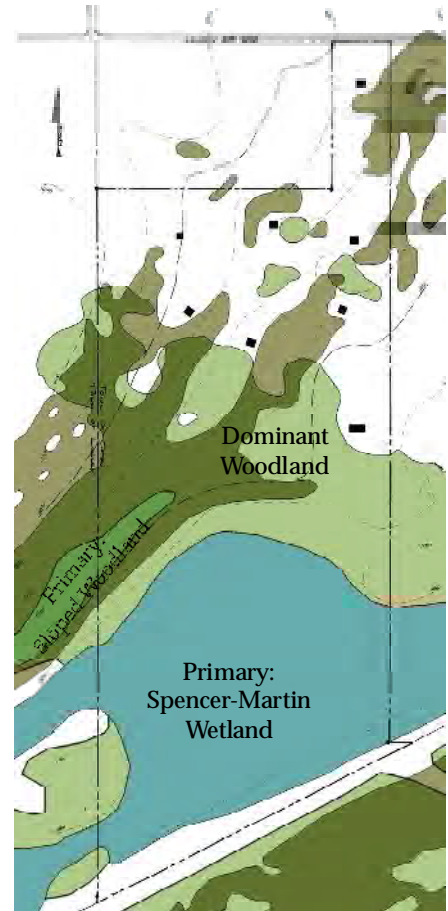
Secondary Conservation areas are those which are intentionally set aside to be preserved. Under a Conservation Subdivision plan such as Arendt proposes, **at least half of the buildable acreage is to be set aside for conservation**, and the full density of that area is eligible to be transferred to the remaining land so that **the potential for development is not reduced**. These areas should, if possible, form a continuous whole which, ideally, ties together with similar areas on surrounding sites, creating the potential for a **network of green space** extending through the community. Generally, these areas are those marked above in one of the maps are good candidates to become part of the Secondary Conservation portion of the site.

The DeWalt site's major feature which could otherwise be developed is the mature woodland. Thus, the goal is to preserve that woodland wherever possible and to create a trail system giving access both to the forest and to the wetland at the bottom of the hill.

## Step Two: Locate Building Sites

Arendt's next step is to **locate the most suitable house sites within the remaining space**. With an eye to locating these houses suitably in relation to one another and on the best possible sites on the remaining, non-conserved land, and keeping in mind the target density and appropriate spacing of homes, the best areas to place homes frequently seem to jump off the page at you when you're looking down at the overlay of maps.

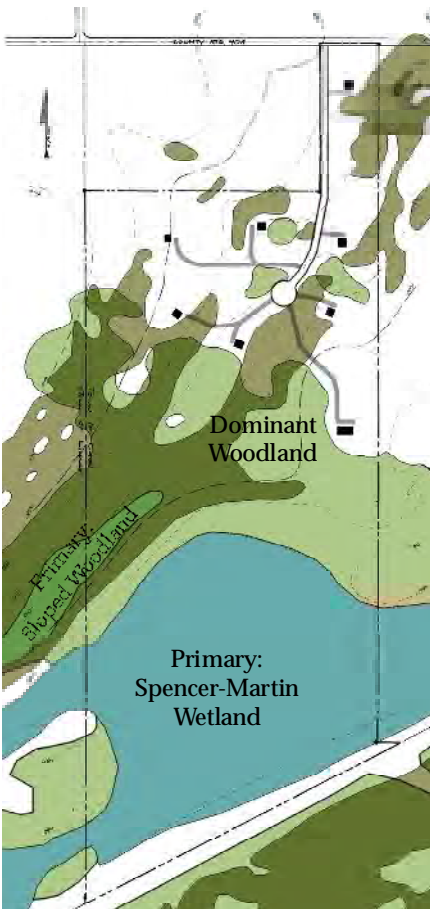
Here, with just over 18 acres as our goal for the maximum developed land, and looking to keep a low-density feeling in the subdivision to maintain the rural character, we have chosen to site 8 potential homes on the northern portion of the site. Tucked back into the woods in the southeast corner of the development, one of the sites is particularly appropriate for the church retreat that Mr. DeWalt expressed an interest in creating.



## Step Three: Lay Out Roads, Trails, and Access

From here, the next step is simple; devising **the most appropriate and economic way to gain access to those sites**, and exploring the access from those sites to the conserved land, whether it be via easements through private lands or through mutually-held trails.

In this case, a relatively short road off of County Rte. 40A terminates in a cul-de-sac broad enough to allow emergency vehicle turnaround, avoiding both steeper slopes and woodland as it curves in to a central spot in the site.



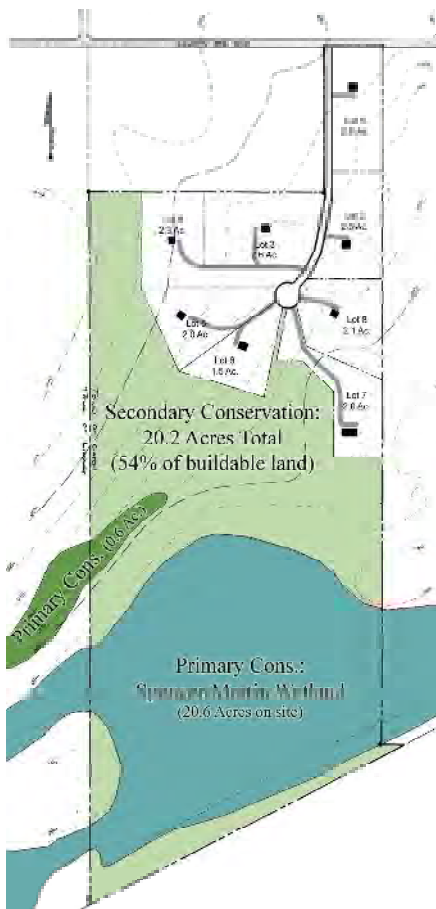
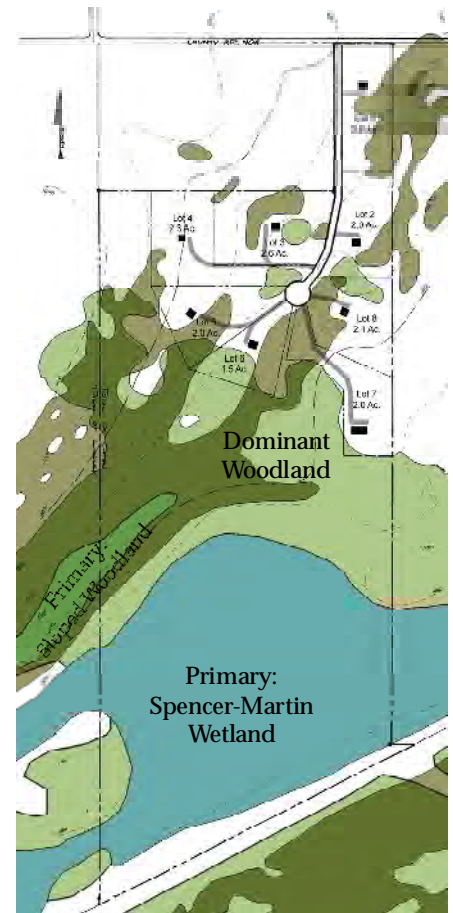


## Step Four: Draw in Lot Lines

The last step in Arendt's process is **the division of the land into individual parcels**. With proposed conservation areas in mind, and keeping access for each house clear, it's simple to draw in lot lines and divide the area into parcels.

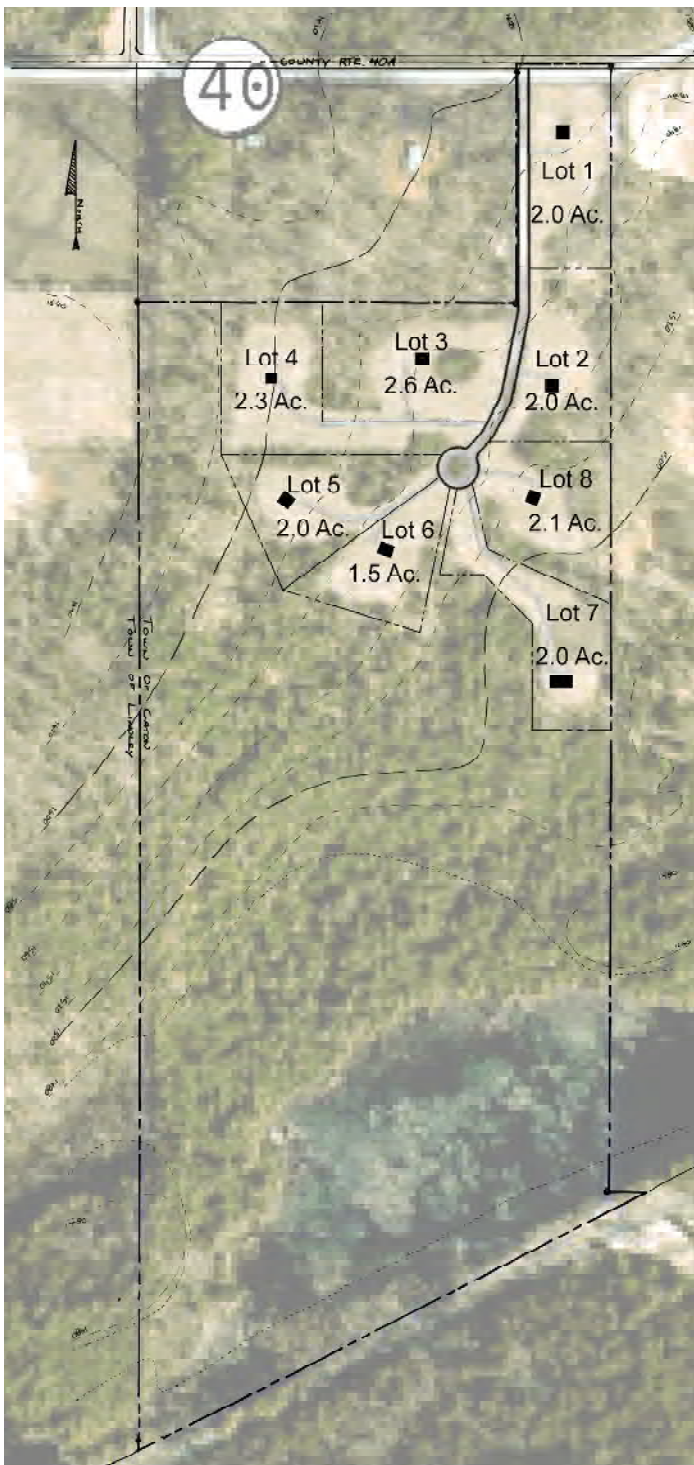
**Keep in mind local zoning codes** while you're working on this step. Most towns have minimum lot sizes, setbacks, and lot widths; **sometimes, there are exceptions made in cases of "cluster housing"** where a percentage of the land is kept as open space. In this case, the Town of Caton allows lots down to half of the standard 2-acre minimum, provided that at least half of the developable land is kept as open space. We haven't needed to go that low; the only lot under 2 acres in the scheme measures 1.5 acres.

**Also pay attention to opportunities for special or unusual lots**; lot 7, as mentioned before, which tucks back away from the others and nestles into the edge of the woods, is well suited to fill Mr. DeWalt's desire for a church retreat.



## Final Layout Analysis:

In the end, for the DeWalt site, Arendt's process has resulted in **just over 50% of the buildable land held in conservation, all in one continuous chunk** which connects with open space to both sides and provides a substantial buffer for the ecologically sensitive wetland area. The 8 lots average out at just over 2 acres each, and only about 950 feet of new road is required. Well over 300 feet of guaranteed buffer exists between the wetland and the closest corner of potential development, and the closest planned building is significantly further.



Proposed development reflected in digitally-modified aerial photo

## Adapting Arendt's Methods:

Arendt's method for Conservation Subdivision Design is **only one potential option for good design**; sometimes, the resulting density is not desired, or other factors serve to limit the potential for a Conservation Subdivision as outlined above.

The most likely obstacle or complication arises when 50% of the buildable acreage is not a suitable figure for conservation, whether for economic reasons or otherwise. In addition, the process only addresses residential subdivisions, and is not completely transferrable to mixed-use or commercial ventures without soem rethinking.

The process, however, is a fundamentally sound approach, and is **far preferable to the traditional one**. These steps, whether taken directly as Arendt proposes them or as a model and a goal, are the basis of sound, good design, as you'll see in the chapters to come.

**For an example of how this process can be codified** into zoning law, be sure to explore STC's website for the Village of Painted Post's Subdivision Law referenced in Appendix D.

For more information on Conservation Subdivision Design and Open Space Planning, take a look at Appendix C; the bibliography also lists several of Arendt's other books.

## 3: Programs and Incentives

### *Promoting Good Design:*

Because the bottom line is often the dollar, it's sometimes not enough that a conservation-minded approach is an environmentally sound alternative which preserves the rural character and promotes more enjoyable and interesting spaces. **It needs to make economic sense** as well. Fortunately, it usually does, if one knows what incentives and other benefits are available, and if the developer stops to examine the benefits and savings included in better design. In many cases, **it actually can result in a significant increase in the value of the land**, especially when one considers how much easier it is to sell well-designed spaces and developments than poorly-designed, cookie-cutter ones. Here, then, are details on some of the direct and indirect sources of value and funding for encouraging and supporting good design.

### *Overview and setup of listings:*

The following pages contain a listing of programs already in place, potential programs that planning boards can implement to encourage good development, and other tools or incentives which developers and planners have at their disposal to facilitate environmentally and regionally responsible design which also makes economic sense.

The listings are broken down and organized as follows:

#### **Title of Program or Type of Tool/Classification**

**Purpose:** Brief overview of the intent of the program.

**Eligibility:** Requirements for participation, if any.

**Description:** A brief explanation of the program or tool, including method of administration and subsequent division of responsibilities.

**Benefits:** A listing of the additional benefits to the landowner or developer, including potential overlaps with other design goals.

**Other notes:** Such issues as extent of use, commentary, potential drawbacks, and other issues.

#### ***Financial Incentives:***

Direct financial benefits of the program or tool, whether a rental rate paid on the land, the percentage split of cost-share between the agency and the landowner, or tax or other benefits.

## State And Federal Agency Programs:

Cost-share or technical assistance programs are available to the landowner and can be used in conjunction with good design to make environmental protection more affordable. Dollar amounts and requirements change from year to year, so be sure to check with the contact agencies listed in Appendix B.

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### New York State Farmland Protection Program

**Purpose:** To maintain active farmland and protect it from development.

**Eligibility:** Owners of private active farmland which is in an area facing significant development pressure and serves as a buffer to a significant natural public resource such as [example]. Soil quality, size, likelihood to stay in farming, and level of farm management are also criteria. The county or the municipality must have a local agricultural protection plan endorsed by the Agricultural and Farmland Protection Board (AFPB). The municipality or the AFPB makes the application to the state.

**Description:** In 1996 the NYS Department of Agriculture and Markets began providing funds to purchase development rights by offering up to 75% of the fair market easement value; the municipality or the landowner covers the other 25%. Eligible costs include surveys, legal fees, baseline reports, title abstracts, insurance, and stewardship fees to cover future monitoring and enforcement costs. There is a funding cycle. Contact STCPRDB for this year's deadlines.

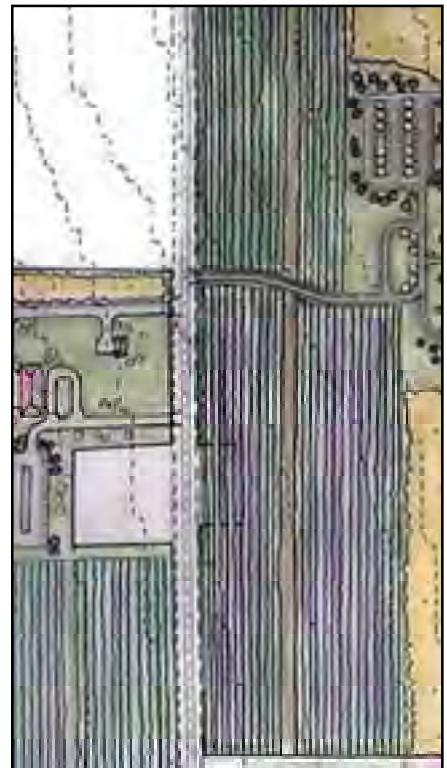
**Benefits:** Farmers stay in business, providing the backbone of the rural economy. Steuben and Schuyler Counties have adopted county farmland protection plans, making their farms eligible for this assistance. Local Master Plans may also include farmland protection, but will need endorsement by the AFPB.

**Other notes:** Housing and other non-farm development must be designed and located on non-agricultural land which will not conflict with farmland protection.

### *Financial Incentives:*

#### Cost Share:

75%/25% match (Municipality or landowner pays 25% share).





## Federal Farmland Protection Program

**Purpose:** To maintain active farmland and protect it from development.

**Eligibility:** Owners of private active farmland which has a conservation plan, is large enough to sustain agricultural production, is supported by agricultural services and markets, and is surrounded by other active farmland. The farm must be part of a pending offer from a state, tribal, or local farmland protection program.

**Description:** The USDA, working with the partner state farmland protection program, provides funds to purchase development rights by offering up to 50% of the fair market easement value. States compete for the funds on an annual basis. Contact STCRPDB for this year's info.

**Benefits:** Farmers stay in business, providing the backbone of the rural economy. Steuben and Schuyler Counties have adopted county farmland protection plans, making their farms eligible for this assistance.

**Other notes:** Housing and other non-farm development must be designed and located on non-agricultural land which will not conflict with farmland protection.

### *Financial Incentives:*

#### Cost Share:

50%/50% match.



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## Forestry Incentive Program

**Purpose:** To promote the conservation, improvement, or reclamation of forested areas on private property.

**Eligibility:** Any private landowner of up to 1000 acres of non-industrial forest land.

**Description:** The program provides cost share assistance for tree planting, timber stand improvement, and related practices to improve private forest land.

**Benefits:** A landowner could use the program to improve the wooded portions of his/her land as part of the overall development plan. Previously clear-cut land could be restored to wildlife habitat, open space, or well-managed timber harvesting operations (which could generate additional income). Care should be taken, however, when designing new house lots near timber management areas to avoid conflicts between the uses.

### *Financial Incentives:*

#### Cost Share:

65%/35% match, up to \$10,000 per person per year.



## Conservation Reserve Program - Erodible Land

**Purpose:** To reduce erosion from highly erodible, marginal land through planting/maintaining cover crops.

**Eligibility:** Owner/Renter/Lessee of 50 or more acres of active farmland. Land in cultivation must have been in a commodity crop (wheat, corn, oats, etc.; not hay) for two of the last five years.

**Description:** Contracts are issued for ten to fifteen years through a competitive bidding process. Sign-ups are on a continuous basis. Land should not be taken out of agricultural production.

**Benefits:** This would be an excellent tool for a farmer who is developing non-farming acreage for other compatible uses. Being paid to reclaim steep slopes would be a bonus, since local planning boards often prohibit development in such areas.

**Other notes:** This program is used extensively in the region. Retired and part-time farmers make up the majority of the participants.

### *Financial Incentives:*

#### Rental rate:

approx. \$32/acre/ year (based on site conditions)



## Conservation Reserve Program - Streamside Buffer

**Purpose:** To create a vegetated strip or “buffer” along a stream which filters out agricultural nutrients and/or chemicals before they reach the stream.

**Eligibility:** Owner of land with “agricultural input” (crop or grazing) to adjacent stream. Not for abandoned pasture.

**Description:** Contracts are issued for ten to fifteen years through a competitive bidding process. Sign-ups are on a continuous basis. Funding is also available for alternate water sources for livestock now restricted from the stream.

**Benefits:** There are long-term savings to a farm operation as they avoid costly environmental cleanup from runoff. Stream corridors are restored as wildlife habitat and open space as part of good development design.

**Other notes:** Since the program incentives are usually less than the active value of the farmland along the stream, a farmer may not be willing to lose the income. This program is not used extensively in the region to date.

### *Financial Incentives:*

#### Payment to Landowner:

50% cost share, PLUS one time incentive payments of an additional 40%, PLUS \$100 to \$150/acre.



## Wetlands Reserve Program (WRP)

**Purpose:** To maintain or increase wetland acreage for wildlife habitat and flood reduction.

**Eligibility:** Any landowner, public or private, of land easily convertible to wetlands or existing wetlands, of any size.

**Description:** Applications for land which meets top wetlands priorities will be selected for the program. A soils scientist or biologist will conduct a site visit to choose the right site and develop a restoration plan. The land, once restored, must be maintained at the owner's expense, which is usually minimal. Landowners retain ownership and may use the land for hunting or recreation. Public access is not required.

**Benefits:** Landowners considering additional uses on existing or former farmland can get personal tax benefits and create a pleasing open space within a creative development. The landowner would gain a monetary value for land which municipalities would restrict from development.

**Other notes:** The value of the easement is based on the agricultural value of the land. Preference is given to land which has been in farming within the past 20 years.

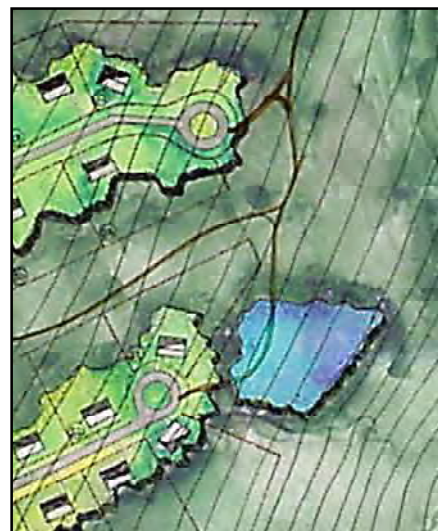
### Financial Incentives:

#### Cost Share:

**10 yr. contract:** 75%/25% match

**30 yr. conservation easement:** 75% of agricultural value of the land and 75% of restoration costs.

**Permanent easement:** 100% of restoration costs and of ag. value.



## Wildlife Habitat Incentives Program (WHIP)

**Purpose:** To increase or preserve wildlife habitat.

**Eligibility:** Any private landowner with open land of any size which can be managed for birdbreeding/nesting habitat.

**Description:** Competitive program. Land with diverse habitat suitable for birds will be selected. Biologist conducts site visit, NRCS staff creates plan and recommends cost-share practices which yield the most benefit. Often, warm or cool weather grasses are planted. Owner obligation is usually 3-year mowing rotation, brush management, and lime/fertilizer application.

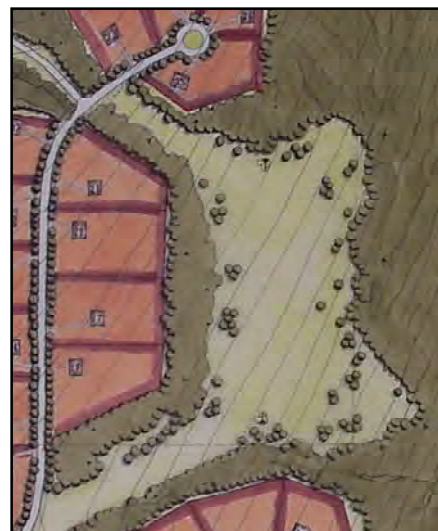
**Benefits:** An excellent opportunity to create attractive open space which would add value to adjacent lots as part of a creative development. Homeowner's association or open space landowner would coordinate ongoing maintenance.

**Other notes:** Especially appropriate for former farmland, since abandoned pasture is easy to reclaim as habitat.

### Financial Incentives:

#### Cost Share:

**75%/25% match.** Landowner's 25% share can be equipment time. \$10,000 cap.





## Environmental Quality Incentives Program (EQIP)

**Purpose:** To protect and improve water quality of streams and aquifers on the Priority Waterbody List (PWL).

**Eligibility:** Farmers who own active farmland which faces serious threats to soil, water, and related natural resources. The land must be located within the watershed of a stream or aquifer on the PWL.

**Description:** Incentives are provided through 5 to 10 year contracts to encourage producers to undertake nutrient, manure, irrigation water, wildlife habitat, and/or integrated pest management practices. At least half the funds must be directed to livestock-related concerns.

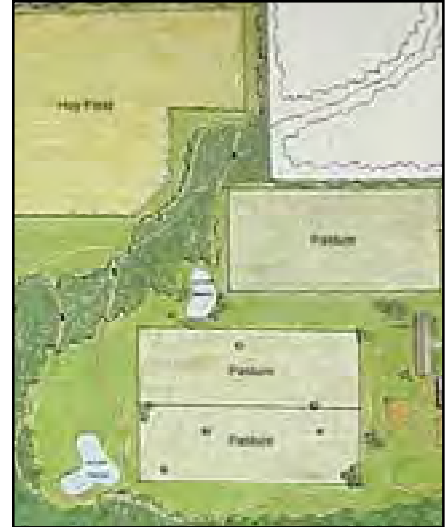
**Benefits:** Excellent assistance which is available to help keep farming in business, through practices which decrease the risk of significant later cleanup or mitigation costs.

**Other notes:** Applications with the highest environmental benefit are preferred. Competition is high and eligible areas are limited. Any non-farm use must be carefully planned so that farming operations may continue.

### *Financial Incentives:*

#### Cost Share:

75%/25% match.



## Agricultural Management Assistance (AMA) Conservation of Private Grazing Land Initiative

**Purpose:** To help keep land in farming and preserve rural character while encouraging better practices and environmental health.

**Eligibility:** Private landowners with active grazing lands which are *not* located within PWL watersheds.

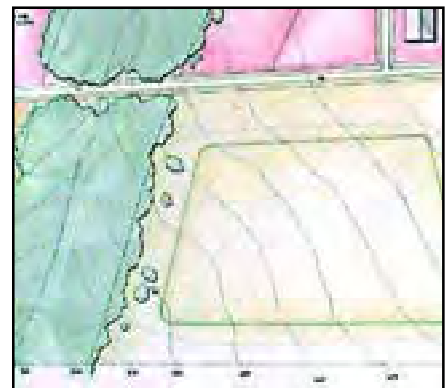
**Description:** Technical assistance and information on better land management, erosion reduction, water conservation, wildlife habitat, and improving soil structure is available.

**Benefits:** Grazing land is compatible with non-farm development such as housing and can provide idyllic country scenery for the new resident. The land stays in active farm use and new rural residents can enjoy a true country setting.

### *Financial Incentives:*

#### Cost Share:

None; technical and information assistance only.





# Tools for Municipal Planners and Developers:

The following are potential measures which can help promote conservation planning and other forms of good design, from the perspectives of both municipal planning boards and developers. Each of these measures is worth considering, and generally needs to be addressed in local planning codes.

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## Conservation Easements

**Purpose:** To protect the important resource value of the property forever, and often to improve property values of neighboring properties.

**Eligibility:** Owners of private land with natural resources/open space value.

**Description:** A conservation easement is a voluntary legal agreement between a land trust, such as the Finger Lakes Land Trust, and a landowner, who places restrictions on the use of his/her land to protect the natural value of the land. The permitted uses normally include: agriculture, some types of forestry, recreation, wildlife habitat, and other open space uses. The easement limits or prohibits activities such as industrial, commercial, and residential development on all or part of the property.

**Benefits:** Easements allow certain economic benefits such as one-time income and estate tax breaks. Over the long term, the property value on the parcel may be reduced due to the easement restrictions, thus reducing property taxes. Neighboring properties, however, often enjoy increased property value since permanent open space is a highly-prized next-door neighbor. Because of this trend, the local community usually breaks even or gains taxes townwide.

## Financial Incentives:

### Tax Benefits:

Deduction of fair market value of the easement from state and federal income taxes.



## Clustered Housing

**Purpose:** To encourage preservation of open space and enhancement of community by developing in nodes.

**Eligibility:** Density and requirements are dependent upon local zoning codes; generally, lot sizes of half standard are permitted provided there are adequate buffer zones between clusters and at the edges of the development.

**Description:** A system of property layout which groups lots together rather than stringing them out with equal frontage along one road.

**Benefits:** Can be used to reduce road lengths and corresponding infrastructure costs, and facilitates shared leach fields or other measures of waste disposal. Smaller lots also leave more land to be held in conservation, and provide a feeling of community.

### *Financial Incentives:*

Potential significant reductions in road and infrastructure costs, and of increased number of properties.



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## Homeowners Associations

**Purpose:** To facilitate and coordinate the management of, and provide economies of scale to the infrastructure costs of, multiple-home developments on a single property.

**Eligibility:** A Homeowner's Association is a legal entity. Membership is frequently required as a condition of purchase of property. For more information, follow the references in Appendix B.

**Description:** Organizations formed as part of a development, particularly when measures such as sewage lift stations, shared septic leach fields, or private roads (which follow different restrictions than public roads) are desired.

**Benefits:** Shared expenses and responsibility over measures which are beneficial to the development's residents as a group; also ensures joint maintenance of commonly-held open space.

### *Financial Incentives:*

Reduced or jointly managed infrastructure and maintenance costs; joint ownership of preserved open spaces.



## Considerations for Commercial Development Alternatives:

Not every rural development needs to be, or should be, purely a housing subdivision. Opportunities abound for creative uses of land for a wide range of commercial and public uses as well, ranging from recreation to hotels or bed-and-breakfasts, from restaurants to outdoor activity centers, from commercial horse farms to wineries. In many cases, these options may make better use of land not particularly suitable for housing, or provide a more financially attractive option in a saturated new-housing market. Frequently, such developments can also better preserve the overall rural character of the area and enhance tourism.

What follows are the major considerations that need to be taken into account in thinking about, and designing, a commercial rather than a residential development, or a combination of the two. A successful commercial alternative needs to be suited to the site, the market, and the surrounding land, and needs to be able to maintain itself in terms of infrastructure and handling the increased vehicular traffic which it will create.

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### Meeting Local Markets

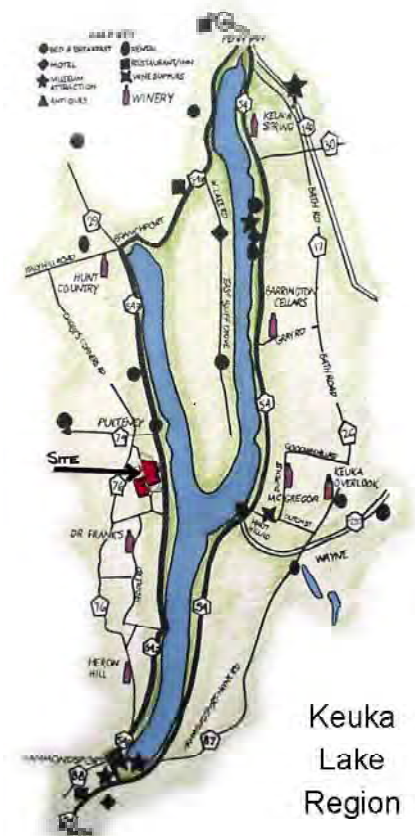
**Goal:** To ensure that the commercial enterprise chosen is economically viable, supported by the region, and in character with the surroundings.

**Process:**

- Local tourism resources, Chambers of Commerce, and other sources can help identify active or underserved markets in the area of the property.
- Map out the locations and assess the state of other enterprises in the area which might overlap or complement the intended development.
- Determine if there is a particular type of commercial development that seems particularly well-suited to the site and is supported by the surrounding area.
- Explore alternatives or modifications of the intended program to optimize the relationship of the development to the land, the community, and the financial potential.

**Issues:**

- Particular uses may or may not be permitted within local zoning; check into how the land is zoned and what types of permitting are required for the intended development.
- If the development is to combine residential and commercial development, consider the possible conflicts between the uses in advance in order to avoid them, or to realize ahead of time that such a combination may not be feasible.



## Designing Adequate Parking

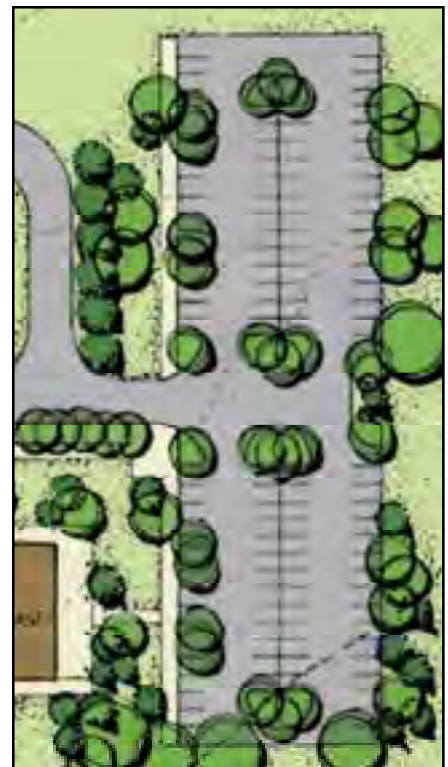
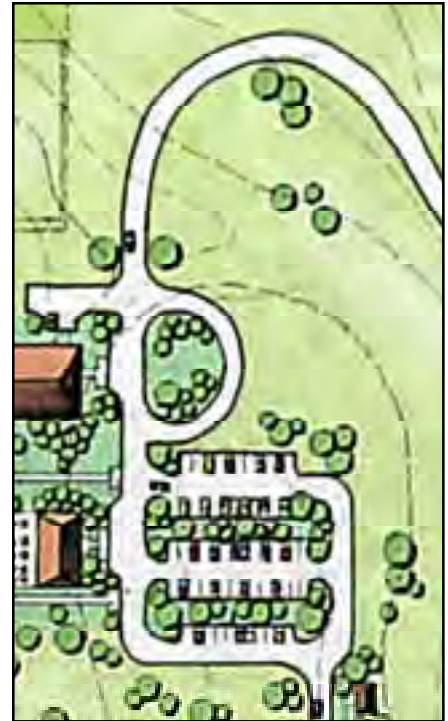
**Goal:** To ensure that adequate parking for the proposed project is available, to assure that that parking is safe and functions efficiently, and to mitigate the aesthetic impacts of parking on the surrounding properties and on the development itself.

### *Process:*

- Determine the projected peak occupancies of the site, as well as what modes of transportation (car, tour bus, bicycle, or on foot) those visitors are likely to use. (Include employees as well as clientele in your figures.)
- Project the number of parking spaces needed, and consider any special parking needs such as buses or horse trailers.
- Working with trace paper over a site map, lay out a basic parking scheme. Approximately, a two-way traffic lane in a parking lot needs to be 20' wide, and a parking space is about 10' x 20'. (These sizes are easier to sketch; an actual space should be 9' x 18', and a travel lane should be 24'.)
- If in doubt, consult with a Landscape Architect or other professional regarding the feasibility of the parking plan.

### *Issues:*

- Consider the slope of the land; parking spaces should never be on a slope greater than 5%, so more steeply sloped land will require heavy grading to transform it into parking.
- Ensure that sufficient room is provided for turning; a car has a 15' turning radius at normal parking lot travel speeds, and a bus requires a 30' radius. In addition, any outside corners of curb should not be sharp; a 5' radius is ideal.
- Consider the path that vehicles will take when looking for a space; it can be very difficult to turn around in a full parking lot, so dead-end areas should be avoided. Looped systems are highly preferable.
- Consider leaving space for islands between rows of parking. In order to successfully maintain a tree in it, an island should be at least 15' across. Islands not only create a more pleasant parking environment and shade, but they can provide a safe aisle for pedestrians to walk in.
- Include handicapped-accessible spaces and access areas, as required by law. The easiest way to do this is to cluster handicap spaces in groups of two, leaving an extra space between them as the access aisle.





## 4: Good Design Overview

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### *What's Coming Up:*

Now that we've looked at the why, the what, and the how of good design, it's time to demonstrate it in action. The remaining chapters in the workbook each look at a **real case study**, an actual site in the Southern Tier region. Each of these sites has been taken on as a design problem by a class of Landscape Architecture students at Cornell University, with a goal of producing **financially-sensible, ecologically-sound design**. Since these designs all stem from real life, they provide a good base of examples of the potential diversity of solutions to the challenges of a particular site.

In addition to simply showing examples of student work, the designs will be discussed in terms of their connection to the programs, incentives, tools, and other goals detailed in the last chapter. It's important to remember that these aren't necessarily perfect designs, nor do they represent the full range of design possibilities; this is work done by students in an academic setting, where the strength of a "design concept" occasionally means more than the financial realities of the situation. These projects, however, contained a continual emphasis on the practical as well as on the process detailed in the preceding chapters, and so are quite representative of real, workable options at the concept-planning level.

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Each of the "Good Design" Chapters contains the following two introductory sections, followed by individual pages highlighting each design solution:

### *Site Introduction:*

Each site is unique, and became part of the Rural Design Workbook through its own circumstances. In this section of each chapter, you'll find a brief overview of the site, some of its history, its location, any noteworthy features, and other pertinent information.

### *Site Analysis:*

As detailed in Chapter 2, a comprehensive site analysis is an important part of a good design. For each of the following sites, the students researched, developed, and communicated a wide range of information. For the purposes of the Workbook, a few examples from each site are shown to demonstrate the diversity of aspects that can be looked at in a strong site analysis process. In addition, we've maintained a common base level by including the two most important facets - slopes and existing conditions - in a common format for all the sites.

### *Individual Design Pages:*

Each page of students' work will consist of a title, a large plan showing either the full extent of the site or a detail of the relevant area, a verbal overview of the design to assist you in reading the plan, a list of highlighted programs and incentives, and an analysis of pertinent statistics.

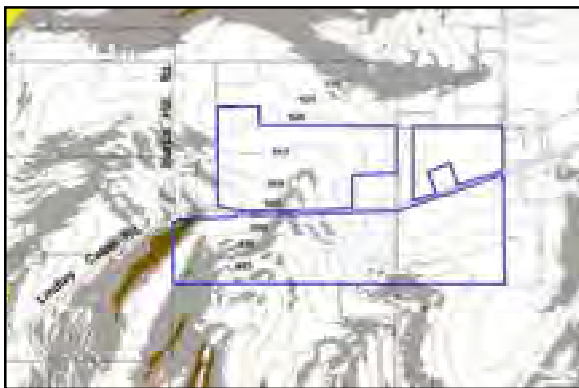
## 5: Good Design - Stuart Site

### *Site Introduction:*

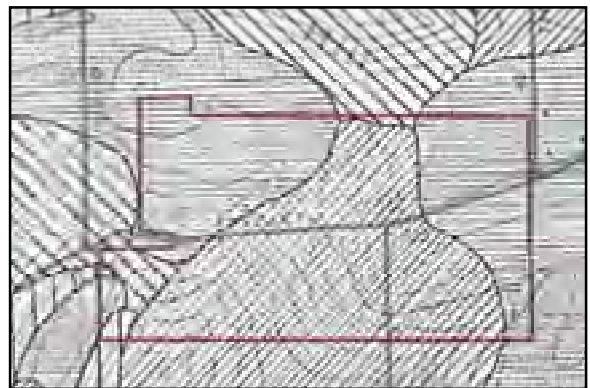
Dean Stuart originally intended to develop his 120 acre hilltop site into a standard, 18-parcel development, but upon further reflection decided to become involved with the Rural Design Workbook project and explore alternatives. The site is former farmland located in the town of Caton, and consists primarily of clear areas with some woodland, with a large storage barn in good condition. Most of the site's slopes are reasonably well suited for construction, as are its soils. The hill falls away to the south, yielding better views on the northern portion of the site.

The land is adjacent to an existing horse farm and another agricultural farm. As the second farm's owner is considering selling their farm, there is also the possibility of expanding the development into a larger project. A final note is that Dean's plans have changed as a result of participating in this project; he is now leaning towards developing rural estates connected to a horse farm through a network of continuous horse trails.

### *Site Analysis:*



Slope Suitability



Soil Suitability

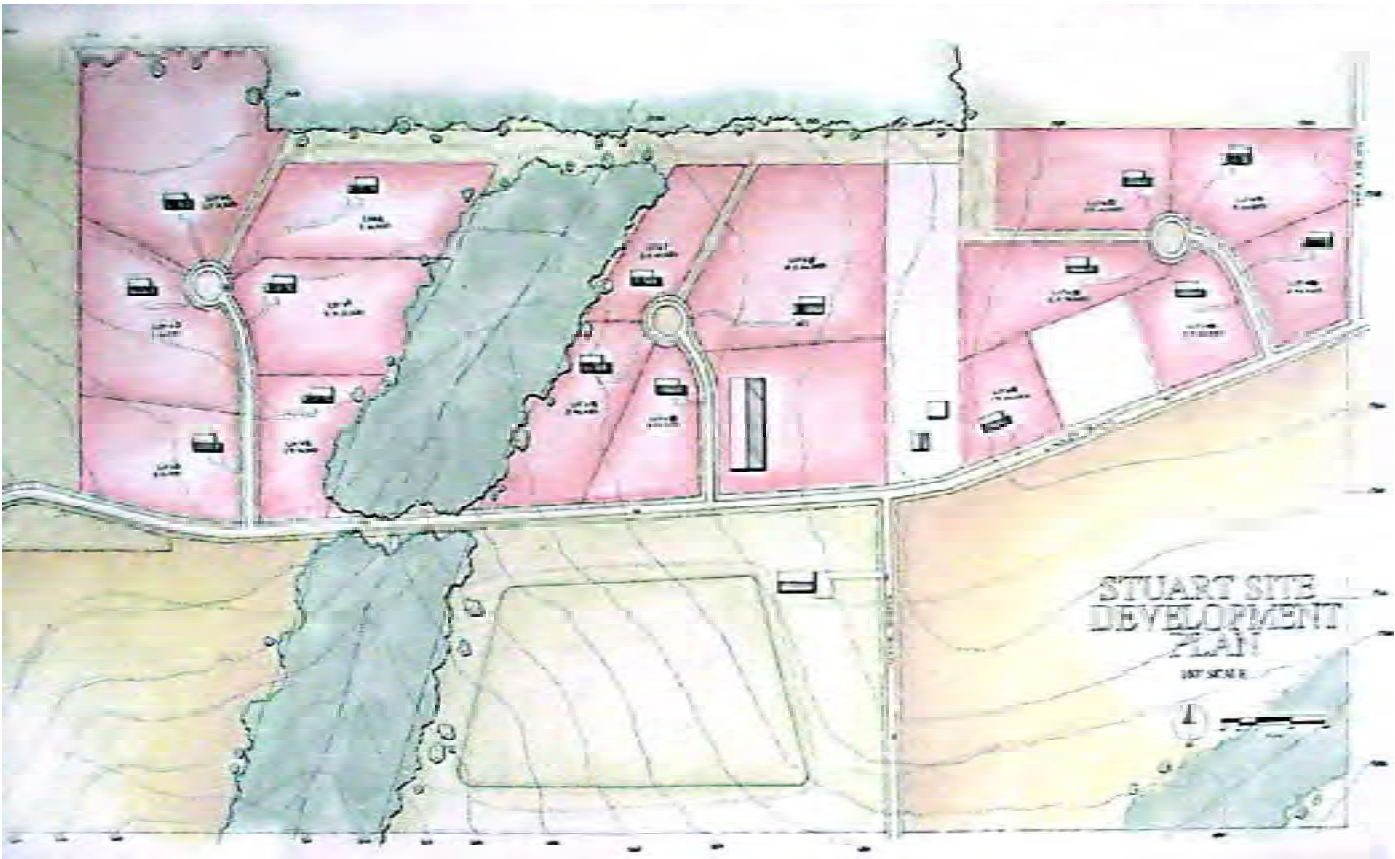


Significant Features



Site Photograph

## Stuart Site: Cluster Lots, Agriculture, and Trail Network



### *Design overview:*

The lots are clustered around cul-de-sacs on the northern half of the site, with the southern half remaining as agricultural land and a horse farm. The stream-buffering greenbelt is a part of a larger network of horse and pedestrian trails connecting the clusters to one another and to the farm, and preserves open space in a conservation easement. The indicated house locations also take care to situate the homes up the slope so as to enhance the views out over the nearby agricultural land and the farther reaches of the valley.

### *Highlighted Incentives:*

- Federal and NYS Farmland Protection Programs: the active agricultural land in the southern half of the site.
- Conservation Reserve Program - Streamside Buffers: the strip along the stream
- Lowered road costs due to clustering of lots and cul-de-sac access
- Heightened home values through access to open space and trail amenities
- Potential for a homeowners' association to manage open space and trails.
- Active agriculture preserves rural character

Number of Lots: 16

Lot Sizes: 2.0 to 6.5 acres

% of Land Conserved: 84%

New Road Length: 1700 ft.

Road Per Lot: 106 ft. per lot

(101 acres out of 120)

# Stuart Site: Open Space Conservation and Created Wetland



## *Design overview:*

Cul-de-sac clusters of small-lot properties provide a higher number of lots with more land left open as a commonly-held open space. This land would be used recreationally and for its aesthetic value as wildlife habitat. In addition, drainage from the majority of the site is directed into and along the stream to a created retention pond and wetland area for runoff management purposes, creating another form of open space amenity.

## *Highlighted Incentives:*

- The Wetlands Reserve Program could provide support for the created pond area.
- A Conservation Easement over the central open space assures that the buffer and amenity created by the central land will always remain.
- The open space created in the unoccupied farmland is a prime candidate for the Wildlife Habitat Improvement Program. (Alternatively, the farm could be kept in use and receive Federal/NYS Farmland Protection Program funds.)
- Clustered Housing provides smaller lot sizes with access to a communal open space.
- Housing of this density is particularly well suited to a homeowners' association.

Number of Lots: 32

Lot Sizes: 2.5 to 5.0 acres

% of Land Conserved: 58%

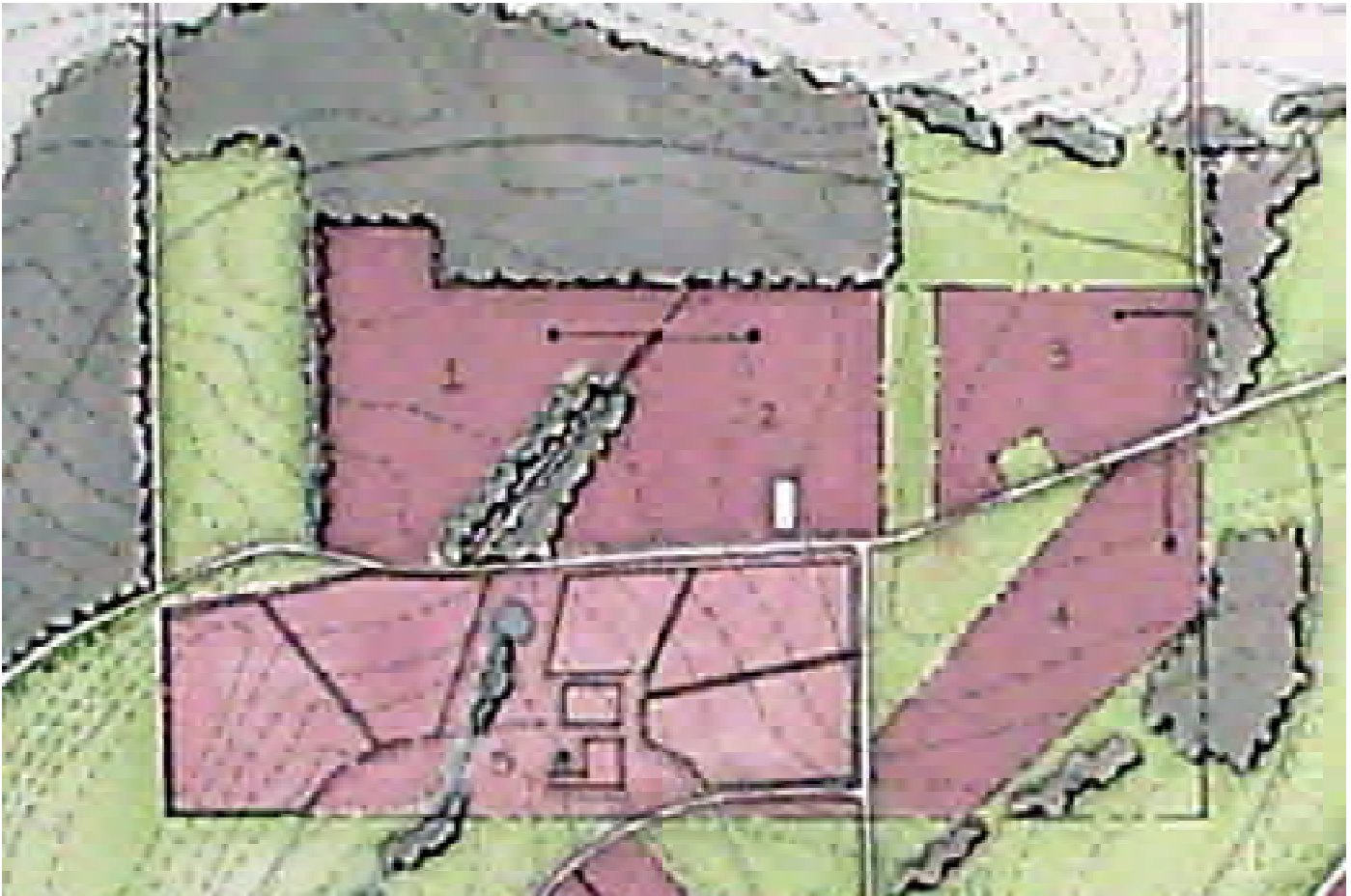
New Road Length: 4800 ft.

Road per lot: 160 ft. per lot

(78 acres out of 120)



## Stuart Site: Large “Estate Lots” and Horse Farm



### *Design overview:*

Four very large “estate lots” cover a large portion of the site, preserving the rural image of widely separated homes on large parcels of open land. The southern portion of the site, which the properties look out over, is kept in active use as a farm for livestock (primarily horses). Significant use is made of the ridge in the southwestern area to separate lot 4 visually from the other lots, and of the stream corridor to serve as the boundary between lots 1 and 2; this is a terrific example of allowing the site features to inform the division of lots in a pleasing way.

### *Highlighted Incentives:*

- EQIP/AMA Grazing program assistance to support the horse pastures.
- No additional roadway costs, since all access is on private or shared driveways.
- Large lot sizes and active pasture use result in a truly rural “feel” to the development.
- Conservation Easement on the agricultural portion would heighten the values of the other lots and reduce the tax burden of the farmer.

Number of Lots: 4

Lot Sizes: 18 to 40 acres

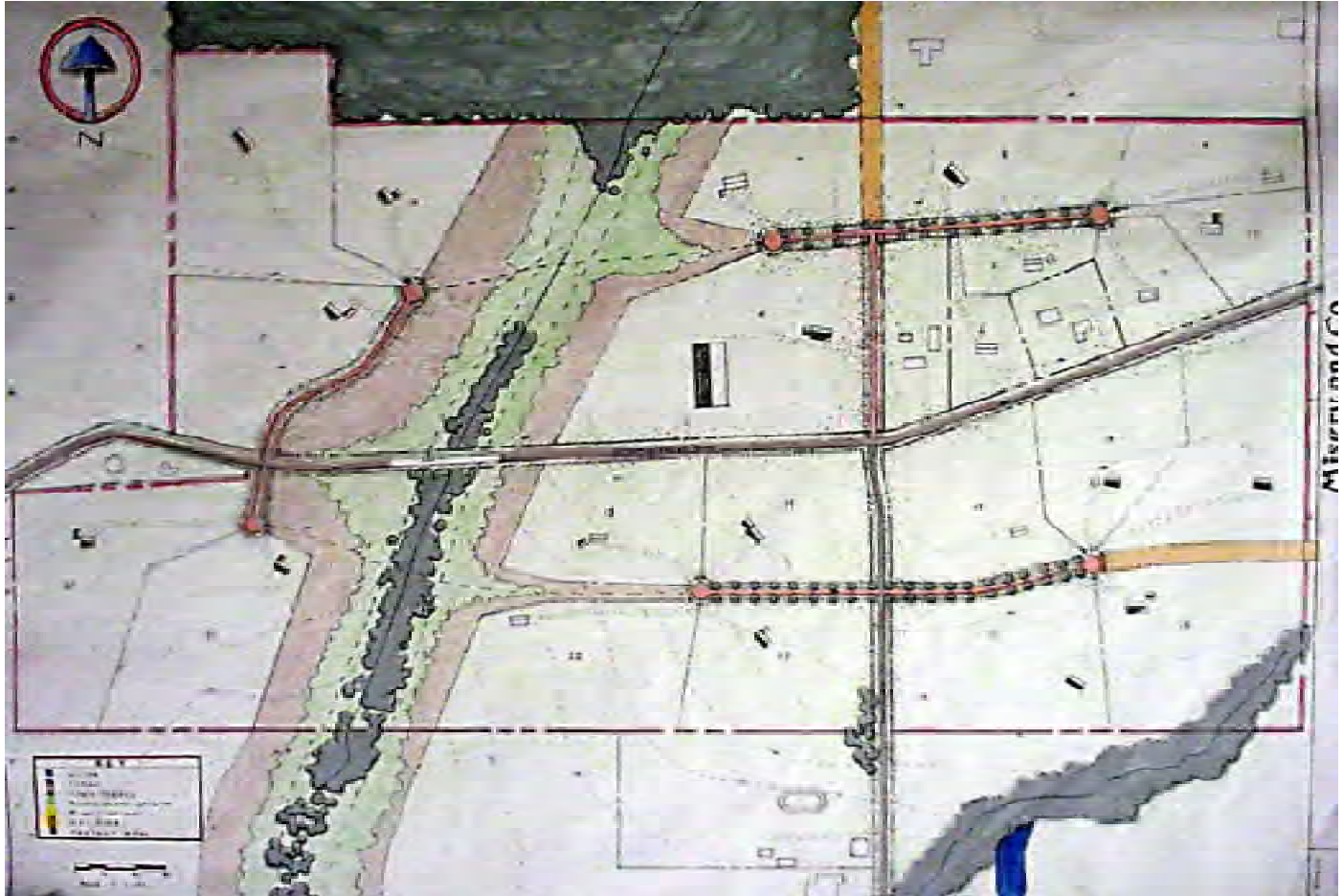
% of Land Conserved: 70%

New Road Length: None

Road per lot: N/A

(84 acres out of 120)

## Stuart Site: Streamside Buffer and Long-Term Linkages



### *Design overview:*

The dominant feature of the design is the broad swath of conserved land along the stream corridor. Beyond simply a protective buffer, the design transforms the stream into an amenity, making it the center of an area suited to wildlife habitat and recreational trails. This main system connects via easements to the cul-de-sacs, linking the development together, and has the potential to extend along the corridor in both directions through cooperation with neighboring developments. Long-term possibilities of expansion are also considered; there are right-of-way easements to allow for extensions of the cul-de-sac roads into neighboring properties.

### *Highlighted Incentives:*

- Wildlife Habitat Improvement Program potential is very high for a corridor connection; such features are highly ecologically valuable.
- A Conservation Easement on the stream corridor protects it from development.
- With proper management and design, the Wetlands Reserve Program could be utilized along the stream.
- The significant inclusion of a natural feature with easy common access raises values.

Number of Lots: 22

Lot Sizes: 1.5 to 3.0 acres

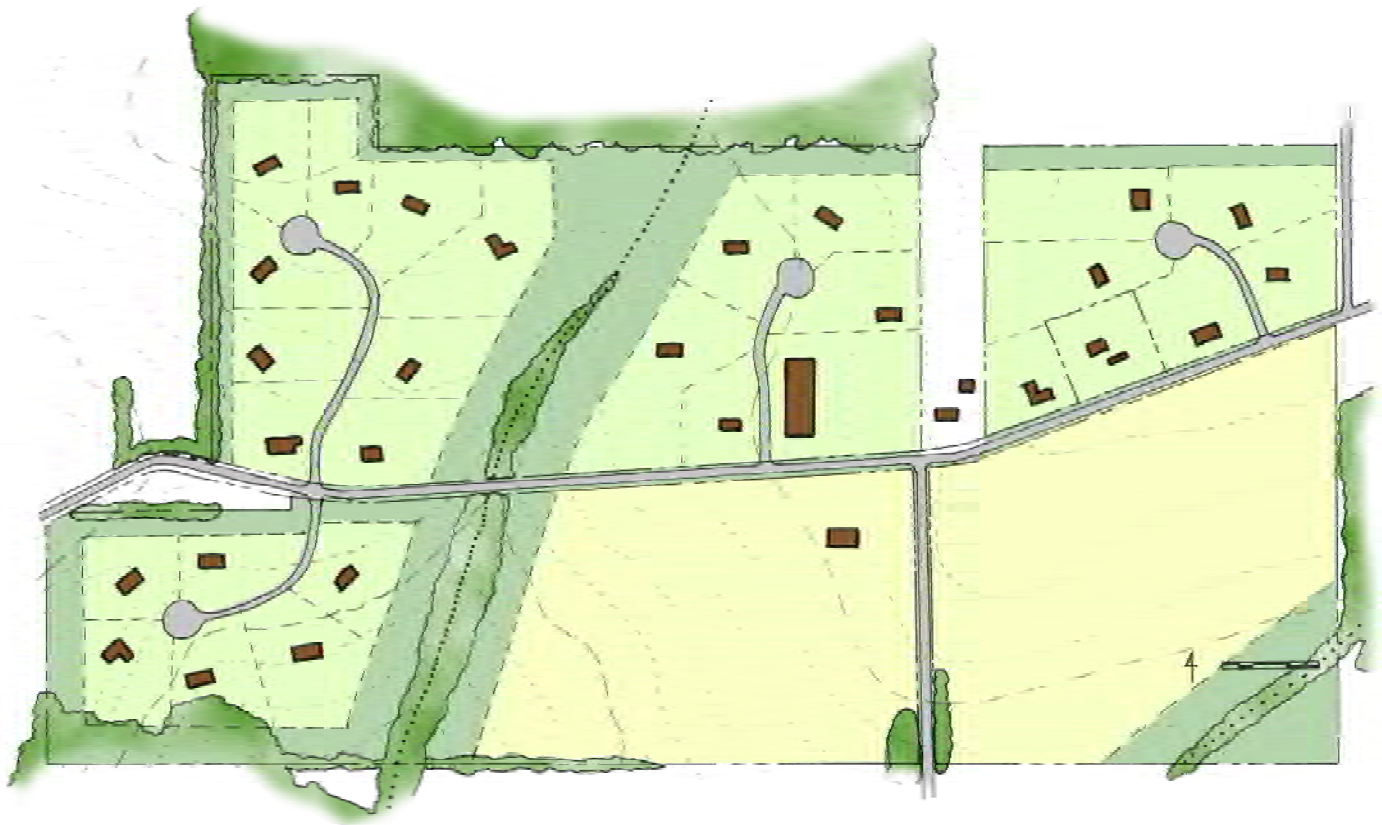
% of Land Conserved: 25%

New Road Length: 3400 ft.

Road per lot: 154 ft. per lot

(30 acres out of 120)

# Stuart Site: Neighborhood Community and Rural Character



## *Design overview:*

Four clusters of houses built on cul-de-sac streets allow nearly all driveways to be off of the main roadway and create a relationship between the lots, facilitating association with neighbors. A buffer strip around the outside of the property reduces the impact this denser development will have on neighbors. Two-thirds of the site remains in agricultural use, and is protected, along with the stream corridors and the outer buffer areas, by a conservation easement.

## *Highlighted Incentives:*

- Federal and NYS Farmland Protection Programs: the active agricultural land in the southern half of the site.
- Conservation Reserve Program - Streamside Buffers: the strips along the streams are eligible, since the adjacent fields are still in farming.
- Siting of cluster houses maintains privacy and views while encouraging interaction.
- Active agriculture preserves rural character.
- Conservation easements on the open space protect the area from becoming more developed and losing its open space amenities.

Number of Lots: 26

Lot Sizes: 1.5 to 6.0 acres

% of Land Conserved: 71%

New Road Length: 2900 ft.

Road per lot: 112 ft. per lot

(85 acres out of 120)



## 6: Good Design - Stevens Site

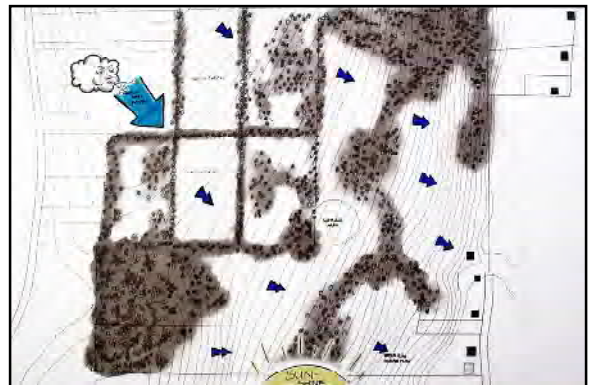
### *Site Introduction:*

Dale Stevens, a developer and home builder, and Peter Marchese, a professional forester, approached the STCRPDB to participate in the program in order to assess the feasibility of developing Stevens' 74-acre property in the town of Corning. Both are interested in the environmental issues involved in its development. As the frontage on Lee Road is at the bottom of the hill and the connection to West Hill Road is only through an easement, and most of the site currently owned is wooded and sloped, Stevens has been approaching adjacent landowners about the possibility of expanding the site to 130 acres. The students supported this and decided to design for the larger, 130-acre parcel. The extended site's western portion is an old former farm, no longer in active use; its outer fields are beginning to go into succession. To the east, the site slopes away increasingly steeply under rather solid forest cover. The students determined that there were significant hindrances to development of the steepest portions, but that that land provided a potentially valuable amenity which could increase the value of any development on the flatter areas, which offered interesting opportunities for unusual design.

### *Site Analysis:*



Slope Suitability



Wind, Water, and Sun Directions



Significant Features



Students Exploring the Site

## Stevens Site: Rural Character and Wooded Lots



### *Design overview:*

Despite similarities at first glance between this proposal and conventional subdivisions, a number of measures have been taken that are in line with the conservation approach. Attention has been paid to the rural character; the general quality both of old farm fields and hedgerows, and of the densely wooded areas, has been maintained. Roads cut unobtrusively into the borders of the fields, and travel across, not down, the slopes of the hill wherever possible. The houses in the woods are nestled into small clearings, on the most buildable land of their lot; the woodland on the rest of each lot is protected by conservation easements.

### *Highlighted Incentives:*

- Forestry Incentive Program funding and Conservation Easements on individual lots help make the property very affordable and preserve the wooded feel of the site.
- The shared open space of the unbuildable lowest slopes can also receive Forestry Incentive Program funding, as well as a Conservation Easement.
- Strong attention has been paid to minimizing visual impact, both from neighboring properties and in terms of distant views.

Number of Lots: 21

Lot Sizes: 2.0 to 4.5 acres

% of Land Conserved: 28%

New Road Length: 6950 ft.

Road per lot: 330 ft. per lot

(36 acres out of 130)

# Stevens Site: Erosion Prevention and Wildlife Habitat



## *Design overview:*

By building only on the upper portions of the site and minimizing intrusion into the forested areas, this design seeks to prevent erosion and lower costs. The value of the wooded land and the conserved open space of the old farm field is preserved and shared among the community through an extensive trail network which connects through shared access corridors to the street right-of-ways. Thus, despite the lower number of somewhat smaller lots, the value of the individual properties is maintained or increased by the access to natural amenities, and development costs are kept low through careful consideration of areas to build or protect.

## *Highlighted Incentives:*

- Wildlife Habitat Incentives Program and Forestry Incentive Program support for the commonly-held open space amenity.
- Lowered road costs due to implementation of cul-de-sacs rather than loop roads (a trend toward Cluster Housing without that level of density).
- Conservation Easement benefits over the steeply sloped areas, where the costs of development would be prohibitive in any case.

Number of Lots: 16

Lot Sizes: 3.0 to 7.0 acres

% of Land Conserved: 53%

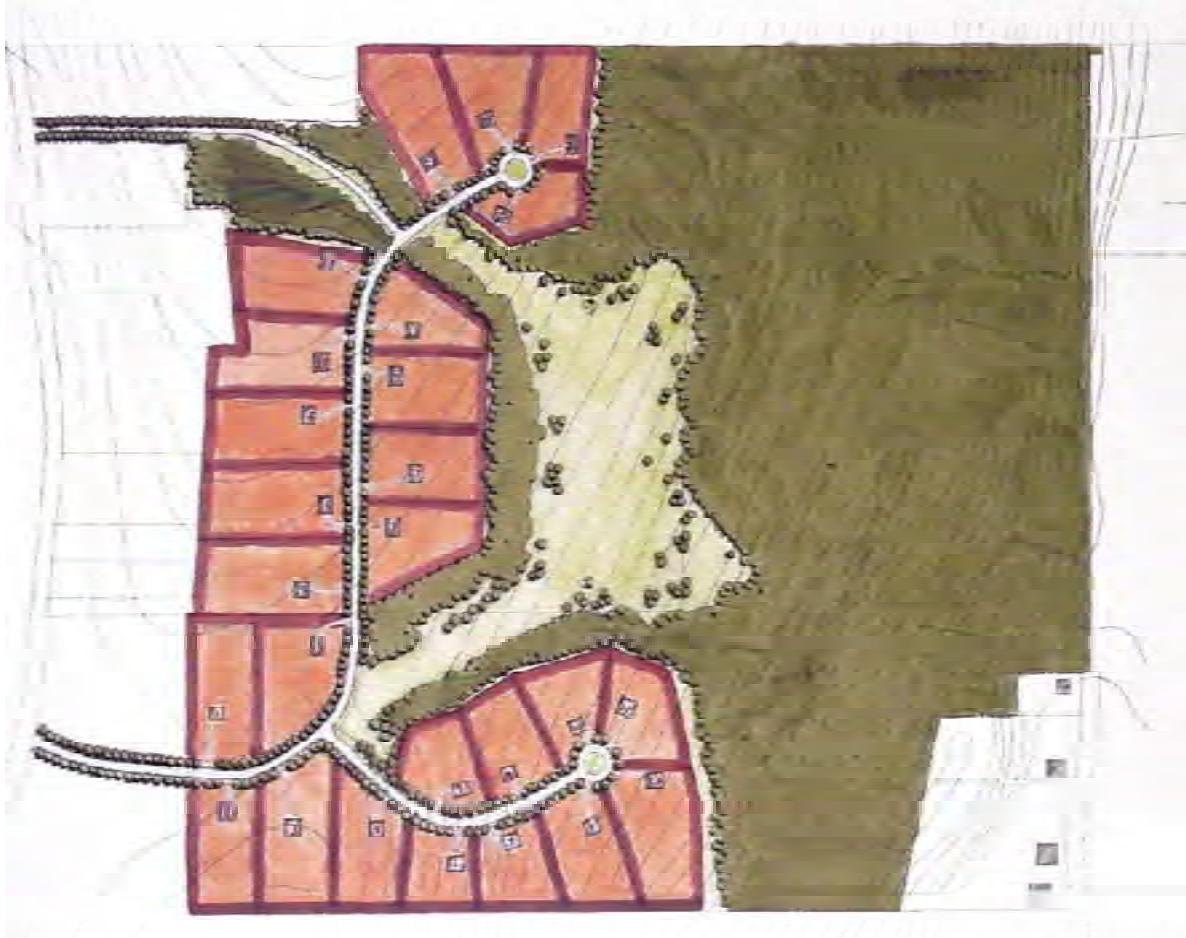
New Road Length: 4400 ft.

Road per lot: 275 ft. per lot

(69 acres out of 130)



## Stevens Site: Shared Open Space and Wooded Buffer



### *Design overview:*

Loosely reminiscent of the Garden City movement demonstrated in such towns as Radburn, NJ, this proposal separates the housing into smaller branches with access to a central open space. The privacy of lots along the open area as well as its park-like feel are both enhanced by the creation of forested buffer strips. This clearing then connects back to the woodland beyond it as well. Meanwhile, the narrower road frontage of the lots combines with the cul-de-sac approach to lower road costs per housing unit and to restrain development to the more buildable areas of the site.

### *Highlighted Incentives:*

- Some of the clearing is left to managed growth to provide habitat through Wildlife Habitat Incentives Program funding.
- The reforestation of the buffer strips and the reclaimed farm fields can be accomplished with the assistance of the Forestry Incentive Program.
- Conservation easements over the open land ensure its protection from further development.
- Housing at this density with shared open space suggests a Homeowners' Association.

Number of Lots: 26

Lot Sizes: 1.0 to 2.0 acres

% of Land Conserved: 67%

New Road Length: 4800 ft.

Road per lot: 185 ft. per lot

(87 acres out of 130)

## Stevens Site: Forest Extension and Hiking Trails



### *Design overview:*

This dense development of small lots is separated into smaller branches by extensions of the wooded forest. Two purposes are served by these fingers of green: the visual impact of the density is mitigated, and the system of hiking trails proposed for the forested area is extended further into the development, enabling easy access for all the residents. Also, the small existing wetland is protected, extended, and connected to the network as a common amenity.

### *Highlighted Incentives:*

- Woodland protection through the Forestry Incentives Program, and wetlands improvement funding through the Wetlands Reserve Program.
- Higher numbers of small lots whose value is boosted by easy access to extensive amenities and careful buffering from neighbors.
- A Homeowners' Association would likely be necessary to handle joint infrastructure costs, as the majority of lots would be difficult to site septic leach fields on.
- Tightly packed, smaller lots result in lower per-lot costs of roadway.

Number of Lots: 46

Lot Sizes: 1.0 to 2.0 acres

% of Land Conserved: 56%

New Road Length: 7400 ft.

Road per lot: 161 ft. per lot

(73 acres out of 130)



## Stevens Site: Hedgerow Easements and Homeowners' Assoc.



### *Design overview:*

The strength of this design comes from its protection of the site's unique character of farmland and woodland. The hedgerows themselves are protected by conservation easements, and supported by the connections of small paths along them which link them to the trail system in the woodland and the far field left to successional growth. The woodland's steep and less economically feasible slopes are thus retained as a resource. A Homeowners' Association helps provide economies of scale for the cluster housing, and ensure shared responsibility for protecting the unique features of the site.

### *Highlighted Incentives:*

- Conservation Easements protect all the important scenic features of the site and preserve the local character.
- Proper buffers around the cluster housing areas reduce the impact on neighboring areas.
- Forestry Incentive Program, Wildlife Habitat Incentives Program, and Wetlands Reserve Program funding helps provide support for the common areas and nature trails.
- Homeowners' Association links the cluster housing development together.

Number of Lots: 28

Lot Sizes: 1.0 to 3.0 acres

% of Land Conserved: 61%

New Road Length: 5200 ft.

Road per lot: 185 ft. per lot

(80 acres out of 130)

## 7: Good Design - Mancuso Site

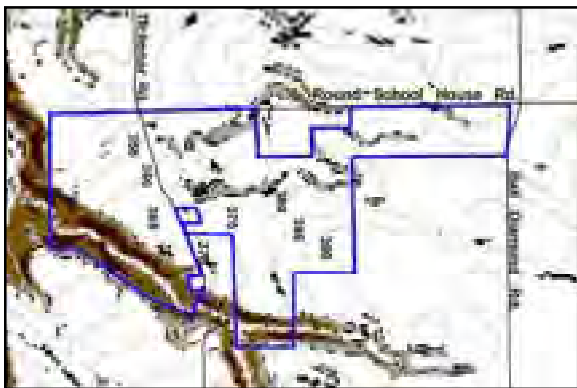
### *Site Introduction:*

Frank Mancuso's family has owned this 172 acre site in the Town of Hector since 1971, and Frank is now looking to the future to develop environmentally compatible uses. Much of the land is in various stages of successional growth, and portions have been recently brush-hogged. The northern narrow portion along Round School House Road is a wetland area. Tributaries to Sawmill Creek drain the site to Seneca Lake, which serves as drinking water to Watkins Glen and lakeside residents.

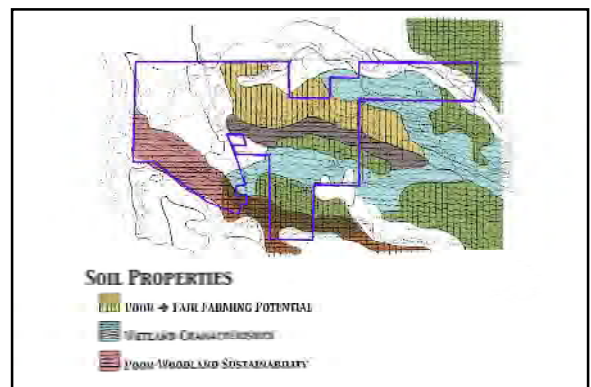
The Finger Lakes National Forest is within two miles to the east. Red Newt Cellars, a popular local winery and restaurant, is located about a mile to the west, at the intersection with Route 414, a busy north/south road. The Town of Hector has no local land use regulations except a minimum of two acres for onsite sewage disposal; thus, any suggested design layouts are only guided by good design principles.

Percentage-conservation figures for this site include the 19-acre interior parcel.

### *Site Analysis:*



Slope Suitability



Soil Suitability

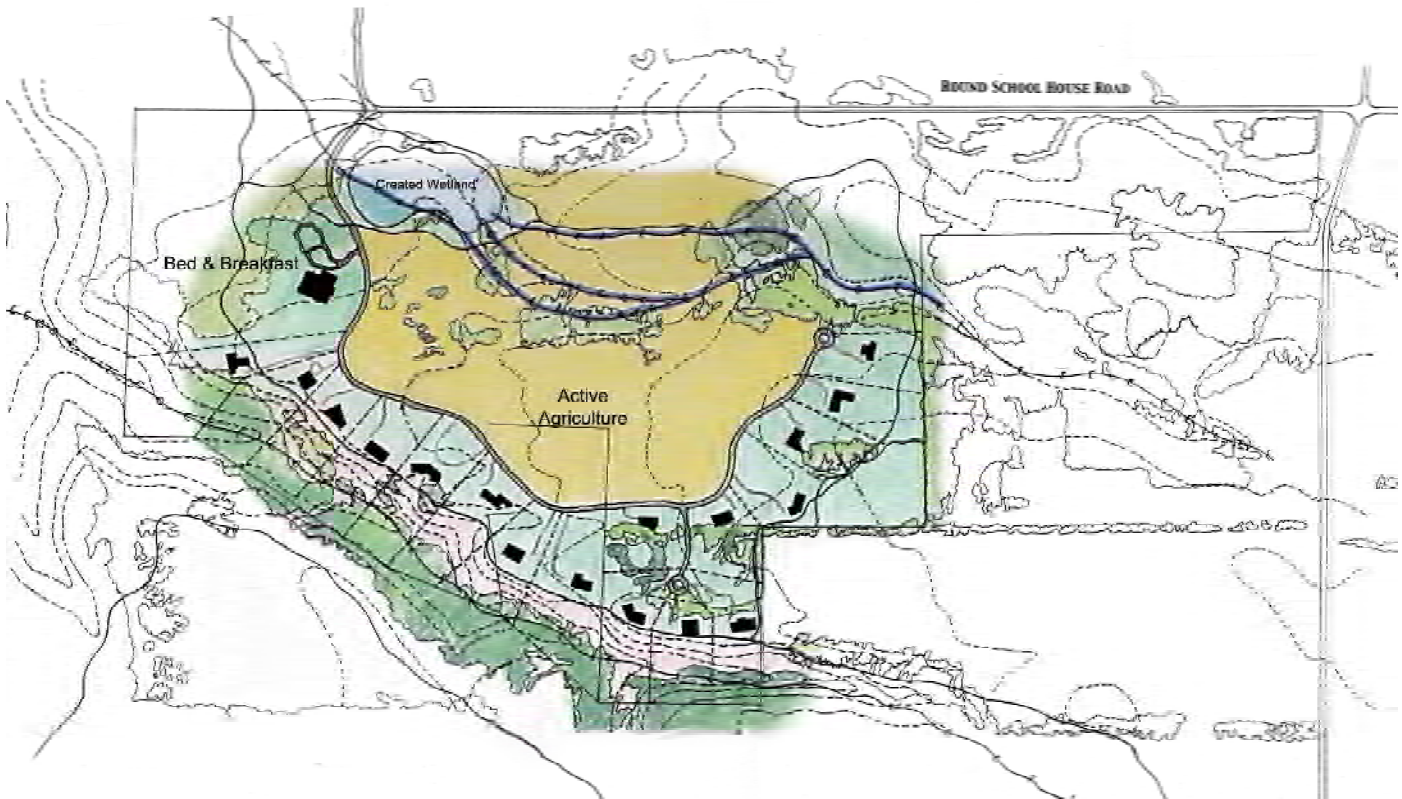


Significant Features



Student-built Site Topography Model

# Mancuso Site: Residential, B&B, and Farming Combination



## *Design overview:*

Taking advantage of the site's location near the wine trail and other tourist attractions, the proposal juxtaposes a residential development with a medium-sized bed-and-breakfast and function hall facility. Both uses are sited onto buildable land which is not especially well suited for agriculture, and the lots extend with conservation easements over the non-developable steep slopes. The majority of the views are thus directed back inward over the prime agricultural land, which is to remain in active agricultural use, leased to a nearby farm. A trail system extending through private property is also proposed, intended as part of a greater gorge path system connecting to Seneca Lake and Hector National Forest.

## *Highlighted Incentives:*

- Conservation Easements over agricultural land and unbuildable areas of private lots.
- Federal/NYS Farmland Protection Program funding to support the agriculture.
- Wetlands Restoration Project potential for restoring and enhancing the wet areas of the site.
- Potential for CRP: Streamside Buffer funding if the waterways are better examined, controlled, and protected.

Number of Lots: 18 inc. B&B

Lot Sizes: 1.5 to 4.5 acres

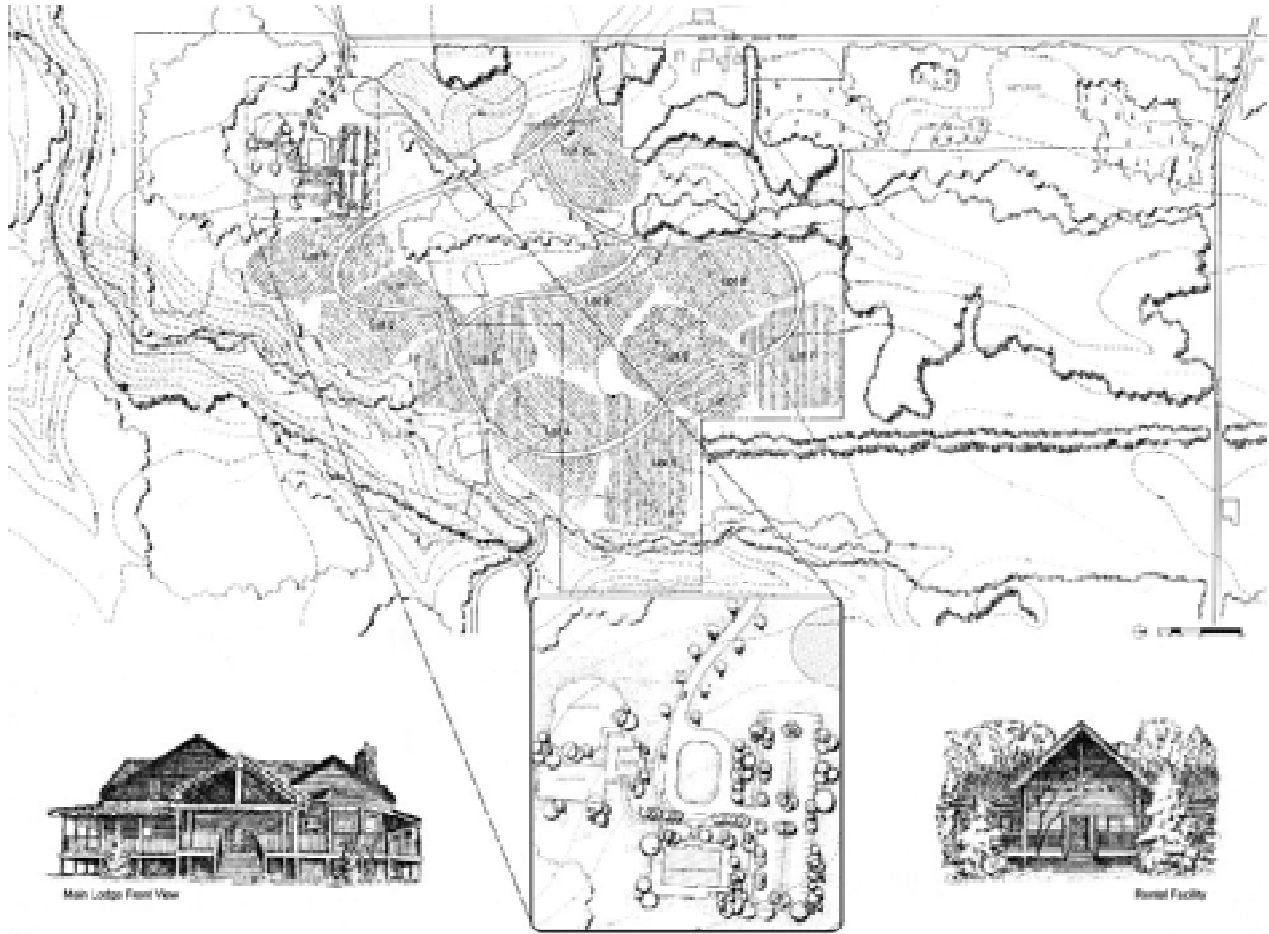
% of Land Conserved: 49%

New Road Length: 4400 ft.

Road per lot: 245 ft. per lot

(93 acres out of 191)

# Mancuso Site: Winter Sports Center and Christmas Tree Farm



## *Design overview:*

The majority of the site is returned to managed forested land by converting it into a Christmas Tree Farm. A variety of species are intermixed and managed to keep the land under forest cover while providing a reliable income source. The other major feature is a winter sports center, featuring a lodge with a small bed-and-breakfast, an equipment rental facility, a hockey rink, a skating pond, and access to trails through the site and connecting to the Finger Lakes Trail for hiking, snowshoeing, and Nordic skiing.

## *Highlighted Incentives:*

- A conservation easement is a viable option, given the intent to keep the land as an open-space amenity with recreational access and managed tree-farming.
- Provided that a responsible plan for management is followed, Forestry Incentive Program funding could significantly aid the startup and maintenance costs for the tree farm.
- Given the strength of the location above Seneca Lake and the low number of winter activity centers compared to the number of potential customers, the commercial venture involved is a prime example of meeting a demand in the market.

Developed Area: 3.5 acres

Roads: 1010 ft..

% of Land Conserved: 98%  
(187.5 of 191 acres)



# Mancuso Site: Golf Course and Retreat Lodge



## *Design overview:*

This proposal utilizes the topographic variation within the flatter portion of the site to provide interest and variety for a 9-hole golf course. In addition, the course's cart paths connect into and form part of a wider walking/hiking trail system serving the site's other function, a retreat hall and event facility. With a recreational amenity on site which holds the land in open space conservation, and a location within 2 or less hours' drive of three major cities (Syracuse, Rochester, and Binghamton), the retreat hall could easily become a very active facility.

## *Highlighted Incentives:*

- The portions of the site's open space not used as golf holes are well suited for Wildlife Habitat Incentives Program support and connection to an educational trail system.
- The majority of the site is kept in open space; a significant majority could be placed under a conservation easement while still leaving suitable space for potential expansion of the facilities at a later date.

Developed Area: 8.5 acres

Roads: 2780 ft..

% of Land Conserved: 96%  
(182.5 of 191 acres)

## 8: Good Design - Greenwood/Brown Site

### *Site Introduction:*

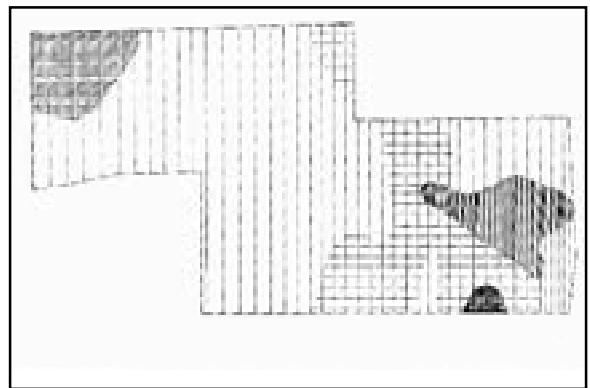
The Greenwood/Brown property, which measures 101 acres and has frontage on two roads, has been farmed for at least 40 years and was purchased in 1975 by a family which has been in farming for seven generations. Currently, the land is used for pasturing dairy cows housed at a nearby farm and occasionally rented for stabling horses. The family would like to continue farming, but would also like to find additional, compatible ways to make money.

The site has several unusual features and considerations. The Watkins Glen Speedway is located within walking distance (during the summer, the front five acres are rented out for daily parking). A barn on the south side of the property is at least fifty years old and qualifies for historic barn restoration funding. Two creeks drain across the property and into the Watkins Glen Gorge, so water quality protection is very important in any design. Lastly, the site is in a designated agricultural district, limiting the density of residential development to 20-acre lots.

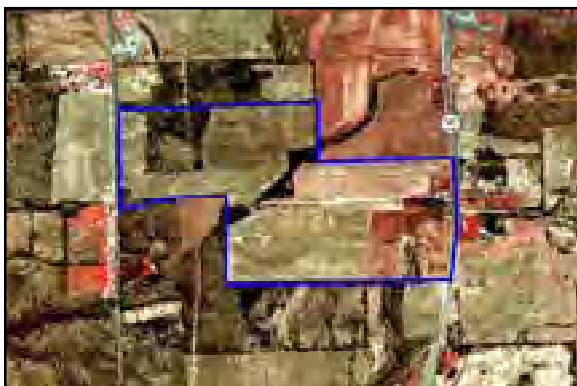
### *Site Analysis:*



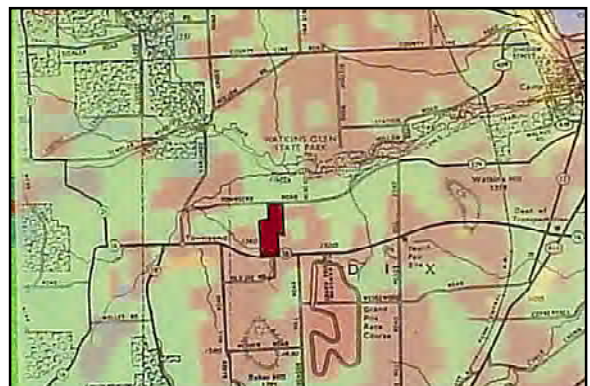
Slope Suitability



Soil Suitability



Significant Features



Context and Land Use Patterns

## Greenwood/Brown Site: Sugar Bush and Bed-and-Breakfast



### *Design overview:*

This proposal combines a bed-and-breakfast facility with onsite agricultural use for visitors to take part in. Specifically, the proposal is for a Sugar Bush (a grove of sugar maples tapped for maple syrup collection) in the front region of the site. As there are no maples at present, however, in the short term the space would be shared by pick-your-own fruit trees, allowing commercial activity and interest in the meantime. The remainder of the land remains, as at present, in active agricultural use as grazing pasture and stabling land to provide a rural setting for the guests and to keep the land in farming.

### *Highlighted Incentives:*

- NYS and Federal Farmland Protection Program funding is available to help keep the agricultural use of the site profitable, thus keeping the rural character intended for the bed-and-breakfast and preserving the pattern of the region.
- Forestry Incentive Program funding may be usable to develop and maintain the maple and fruit tree stocks in the sugar bush area.
- Either AMA Private Grazing Land Initiative support, or EQIP funding, is a potential source of help for proper management of the livestock concerns.

Developed Area: 2.0 acres

Roads: 1550 ft..

% of Land Conserved: 99%  
(99 of 101 acres)

## Greenwood/Brown Site: Horse Stables and Riding Area



### *Design overview:*

The land's rural character is maintained through the high presence of horse stock and the prominence of open pasture. The stream corridors are protected by buffers and kept wild, and riding trails cover the non-pasture portions of the site. These trails are spread out enough that the remaining land between provides prime wildlife habitat.

### *Highlighted Incentives:*

- CRP: Streamside Buffer support would help with the cost of protecting and maintaining the two stream corridors.
- The high livestock presence on the site suggests a strong case for EQIP/AMA Private Grazing Lands funding.
- Wildlife Habitat Incentives Program funding to improve the non-pasture open space on the northernmost quarter of the site, kept wild for horse trails.
- There are special parking considerations for horse trailers, and for infrequent large gatherings (for horse shows and the like).

Developed Area: 7 acres

Roads: 980 ft..

% of Land Conserved: 94%  
(94 of 101 acres)



## Greenwood/Brown Site: Hotel and Commercial Complex



### *Design overview:*

Combining a small hotel and seven separate log cabins, a restaurant, a convenience store, a “sandwich shack,” and an ice cream shop with other commercial space available, this proposal transforms the site’s core into a small center of activity placed within a rural setting. Located very near to the tourist attractions of both Watkins Glen State Park and the Watkins Glen Raceway, the site is particularly well-situated to provide lodging and to attract customers. The neighboring properties are protected by the same measure that gives this small center its charm: conservation easements provide buffer strips of open land that protect the local character and provide ample space for wildlife habitat and reforestation, as well as the potential to lease the space for continued farming use.

Note: This image does not show the full extent of the property; the rest is open space.

### *Highlighted Incentives:*

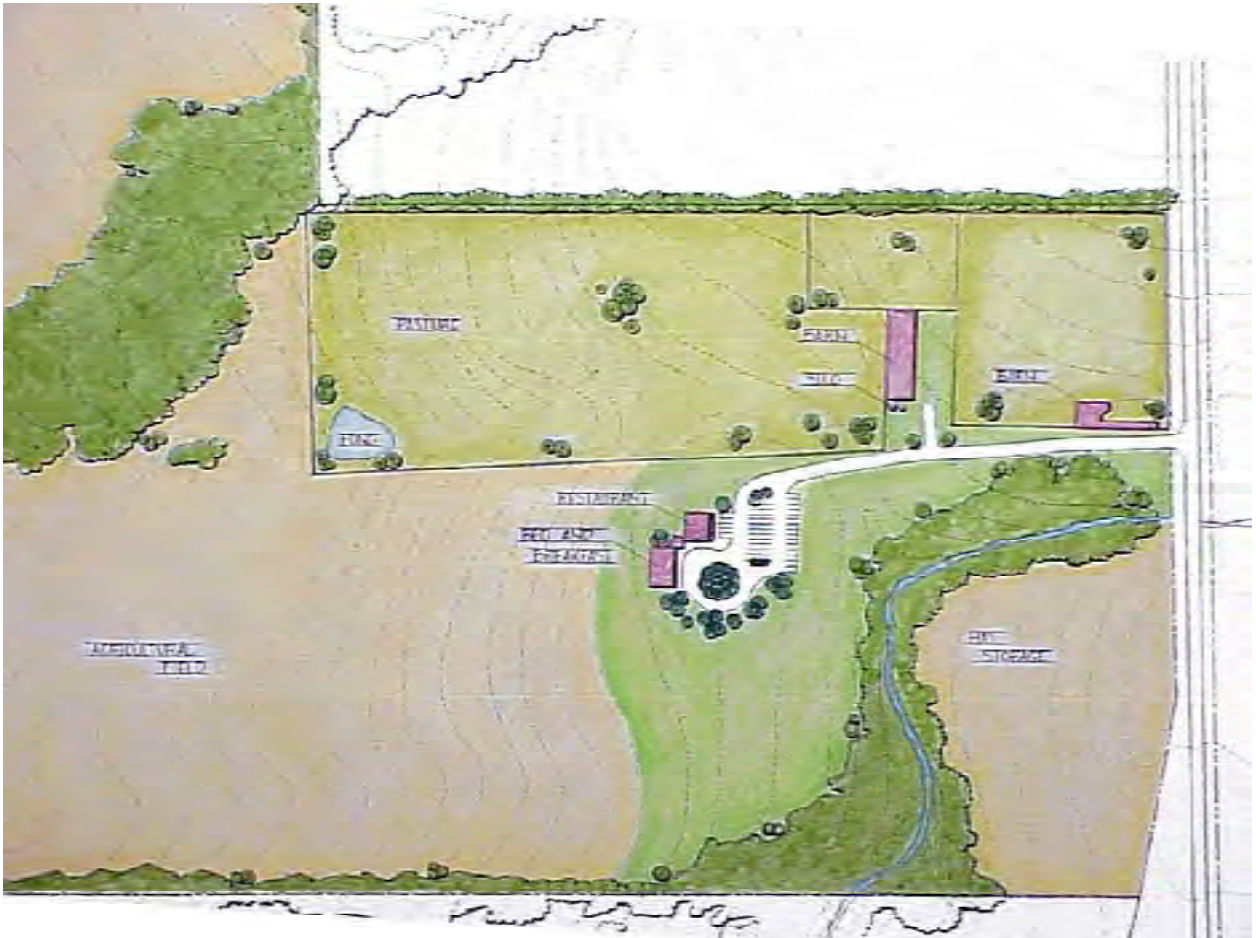
- Significant conservation easements over the majority of the unused acreage (while still leaving room for potential expansion).
- Wildlife Habitat Incentives Program and Forestry Incentive Program funding is intended to help reclaim and manage the non-farmed areas.

Developed Area: 5.0 acres

Roads: 2470 ft..

% of Land Conserved: 96%  
(96 of 101 acres)

## Greenwood/Brown Site: Active Farm and Bed-and-Breakfast



### *Design overview:*

A new cow barn and a renovation of the existing barn structure to enhance the livestock capacity of the site, combined with crop farming on the fields, provide a truly rural setting for a bed-and-breakfast and restaurant situated on less-prime agricultural land. The restaurant can draw upon the produce from the site for its menu, and the lodging is complemented by the nearby activities as well as the authenticity of the rural setting.

Note: This image does not show the full extent of the property; the rest is open space.

### *Highlighted Incentives:*

- NYS and Federal Farmland Protection Program funding is available to help keep the agricultural use of the site profitable, thus keeping the rural character intended for the bed-and-breakfast and preserving the pattern of the region.
- As the land alongside both streams is in active use, CRP Streamside Buffer support is available to help protect the water quality.
- Either AMA Private Grazing Land Initiative support, or EQIP funding, is a potential source of help for proper management of the livestock concerns.

Developed Area: 2.0 acres

Roads: 1010 ft..

% of Land Conserved: 99%  
(99 of 101 acres)

## Greenwood/Brown Site: Farmers' and Craftsmans' Market



### *Design overview:*

This proposal takes advantage of the fact that a small portion of a site which is generally highly suitable for agricultural use is instead far better suited for development (due primarily to soil characteristics). The majority of the site is kept as active farmland, and the small parcel aimed for development complements this through its use as a local farmers' market. This provides a central location for the region's farmers and craftsmen to gather and sell their wares. Given the popularity of Ithaca's Farmers' Market in the region, a more local alternative at the same scale is sure to be a success in the area. The farmland, meanwhile, could either be leased by one larger farming operation, or divided into smaller rental vegetable garden plots.

### *Highlighted Incentives:*

- NYS and Federal Farmland Protection Program funding to help support the agricultural use, combined with a close relationship to a market.
- CRP: Streamside Buffer support for the protection of the waterway separating the two fields.
- Strong attention to the impact on rural character, especially by locating sufficient parking back behind a buffer of trees, thus lowering the visibility from neighbors and the road.

Developed Area: 6.0 acres

Roads: 590 ft..

% of Land Conserved: 95%  
(95 of 101 acres)



## 9: Good Design - Tears Site

### *Site Introduction:*

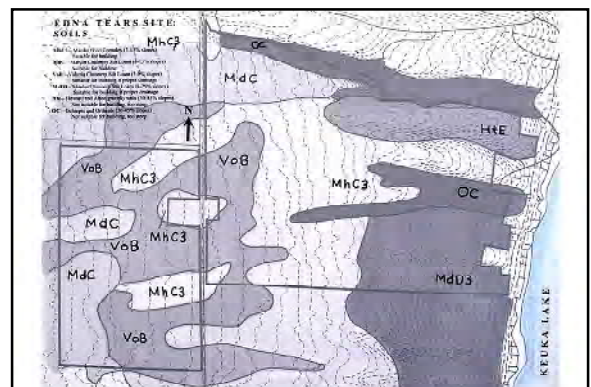
Located atop the western slopes above Keuka Lake in the town of Pulteney, the 127-acre site, part of an estate administered by Edna Tears, commands a particularly lovely view. The upper portion of the site is primarily open meadow and former agricultural fields, while the lower slopes, which are wooded, slope steeply away and are cut by many gullies. A stream flows along the north edge of the property with attractive waterfalls. There is no direct lake frontage, but there is limited access to Route 54A which follows the edge of the lake.

A house and barn on the site are in very poor condition and beyond repair, and a small gravel borrow pit appears to have been excavated. The site is divided, with a portion on the west side of Cross Street Road. There is good quality water in several dug wells and an operating natural gas well is located on the west side of Cross Street. As the owner was more interested in exploring options than in quickly selling the land for a residential development, the primary focus of the students was on commercial options.

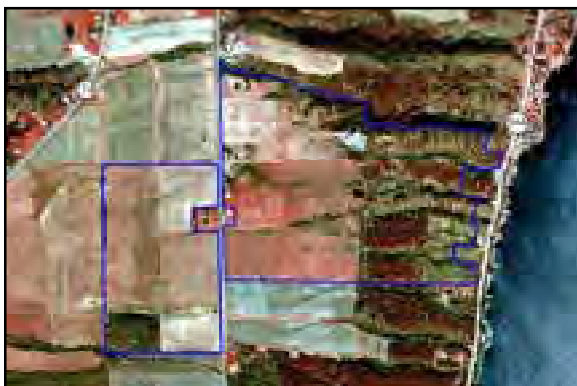
### *Site Analysis:*



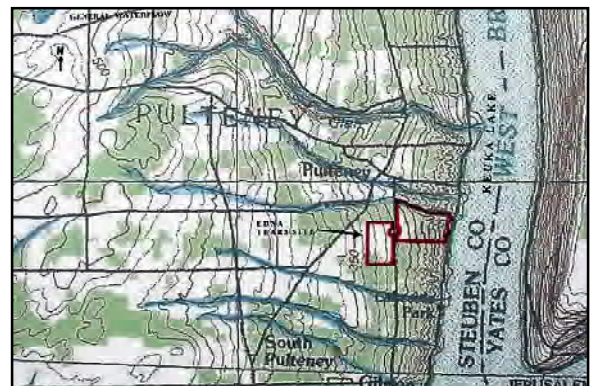
Slope Suitability



Soil Suitability



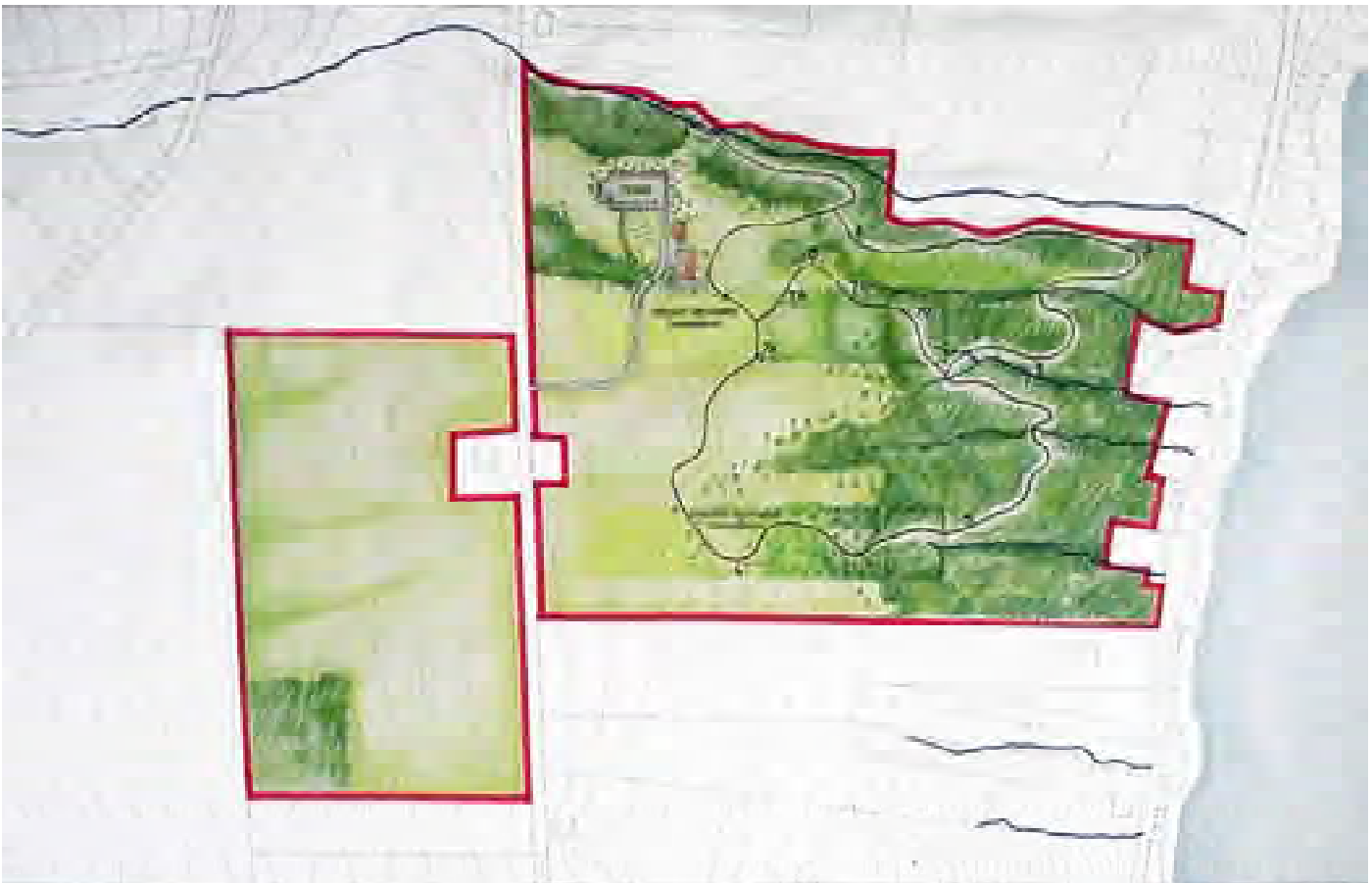
Significant Features



Regional Context and Waterflow



## Tears Site: Nature Center



### *Design overview:*

The site is already beginning successional growth: the forests have reclaimed much of the lower portion of the site, as compared to aerial photographs from around 1950; the signs of ecological reclamation and its stages are visible as one walks the forested areas; and the inactive farmland has already returned to a meadow state, and is beginning to show signs of succession. In keeping with this, then, this design proposes to transform the site's open space into an educational and recreational amenity, placing a conservation easement over nearly all of the property and managing different areas of the site to demonstrate various ecological principles. Wildlife habitat and experience also play a major role on the site's program. The design proposes an extensive trail and signage system to educate and inform visitors.

### *Highlighted Incentives:*

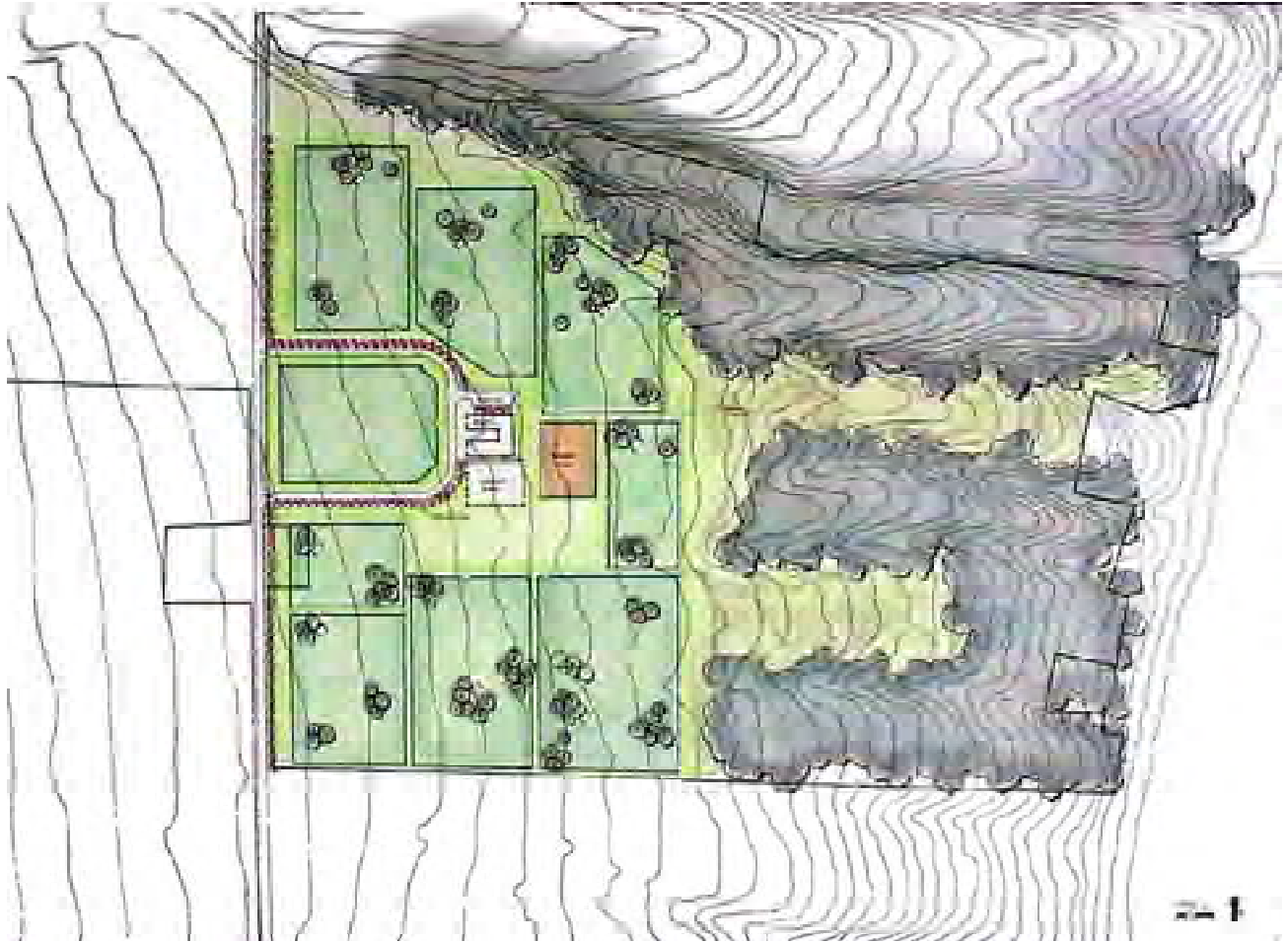
- Wildlife Habitat Incentives Program and Forestry Incentives Program support for a venture of this nature is sure to be very strong.
- Conservation Easements over the land not only make the proposal less costly, but improve neighboring property values as well.

Developed Area: 2.0 acres

Roads: 1060 ft..

% of Land Conserved: 98%  
(125 of 127 acres)

## Tears Site: Horse Farm and Riding Center



### *Design overview:*

Taking advantage of the site's prime potential as grazing pasture, this design proposes to transform the site from agricultural farming to a horse farm. Combining stables, a riding barn, extensive pasturing, and competition facilities, the proposal maintains the openness and livestock presence characteristic of rural settings, while at the same time meeting a need in the local market - there are currently very few horse stabling facilities in the area compared to the demand, leaving horse enthusiasts to drive over an hour to stable or ride their horse.

### *Highlighted Incentives:*

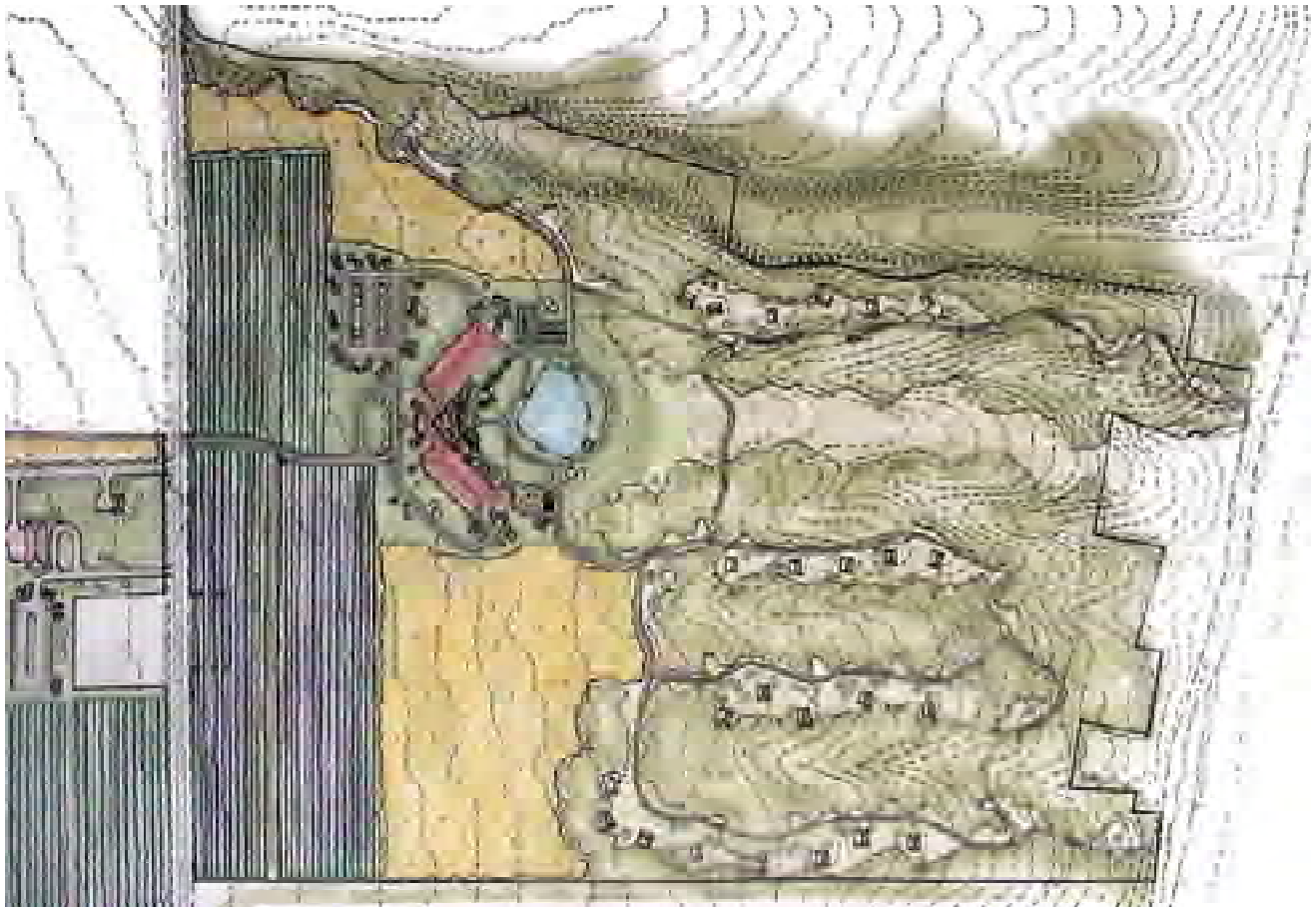
- The high equine presence on the site suggests a strong case for EQIP/AMA Private Grazing Lands funding.
- A management program (potentially supported by CRP: Streamside Buffer funds) is necessary to protect the watershed of Keuka Lake from such high livestock concentration.
- There are special parking considerations for horse trailers, and for infrequent large gatherings (for horse shows and the like).

Developed Area: 3.0 acres

Roads: 1390 ft..

% of Land Conserved: 97%  
(124 of 127 acres)

## Tears Site: Winery, Hotel, Restaurant, and Cabins



### *Design overview:*

Despite the prevalent wineries along Keuka Lake, there are very few hotels or other significant places from which to base a wine tasting tour or other Finger Lakes vacation. The upper land of the site, meanwhile, is well suited to agriculture. Thus, the resulting proposal here is to create a hotel/restaurant combination which connects with a vineyard to provide a destination spot for tourism. A corridor is re-cleared to its 1950's state through the vegetation (on one of the less-sloped areas between the gullies), opening the spectacular view to Keuka Lake from the hotel even more. Meanwhile, the other buildable areas in the wooded slopes are the site of a group of cabins, providing an alternate choice for lodging.

### *Highlighted Incentives:*

- NYS and Federal Farmland Protection Program monies help support the vineyard.
- Wildlife Habitat Incentives Program funding is intended to help reclaim and manage the portions of the agricultural land which is not well suited for vineyards.
- Forestry Incentives Program support may be available to help manage and maintain the woodland, especially in the gullies which are in danger of erosion.

Developed Area: 18 acres

Roads: 12,280 ft..

% of Land Conserved: 86%  
(109 of 127 acres)

## 10: Good Design - Clarke Site

### *Site Introduction:*

Peggy Clarke's property, a 600-acre parcel in the towns of Baldwin and Chemung (Chemung County), is one of only 35 Bicentennial Farms in the State of New York - meaning that it has been in continuous cultivation for over 200 years. With 325 acres currently in crops, four separate farm complexes dating back to the early 1800s, and over 200 Jersey cows which are milked twice a day, the farm has both historical and current value.

However, the site is potentially threatened by future development: Route 17, the future Interstate 86, passes just south of the site. With an eye to the future, Peggy Clarke submitted the site to take part in the Rural Design Workshop to search for possibilities that would enhance and preserve the value of her land as well as its agricultural and historical heritage.

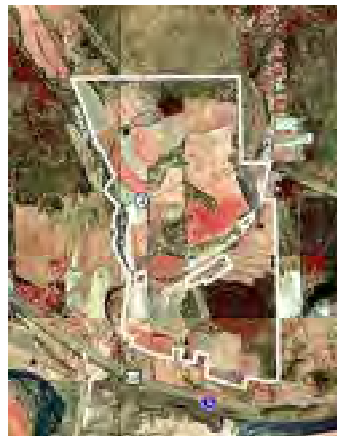
### *Site Analysis:*



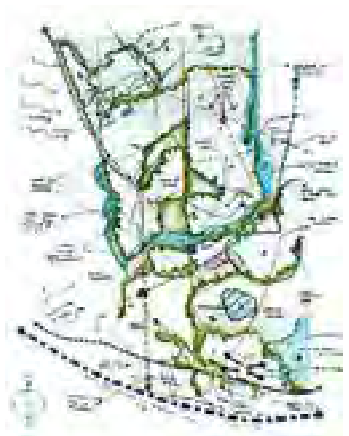
Slopes & Hydrology



Soil Analysis



Significant Features



Overall Analysis



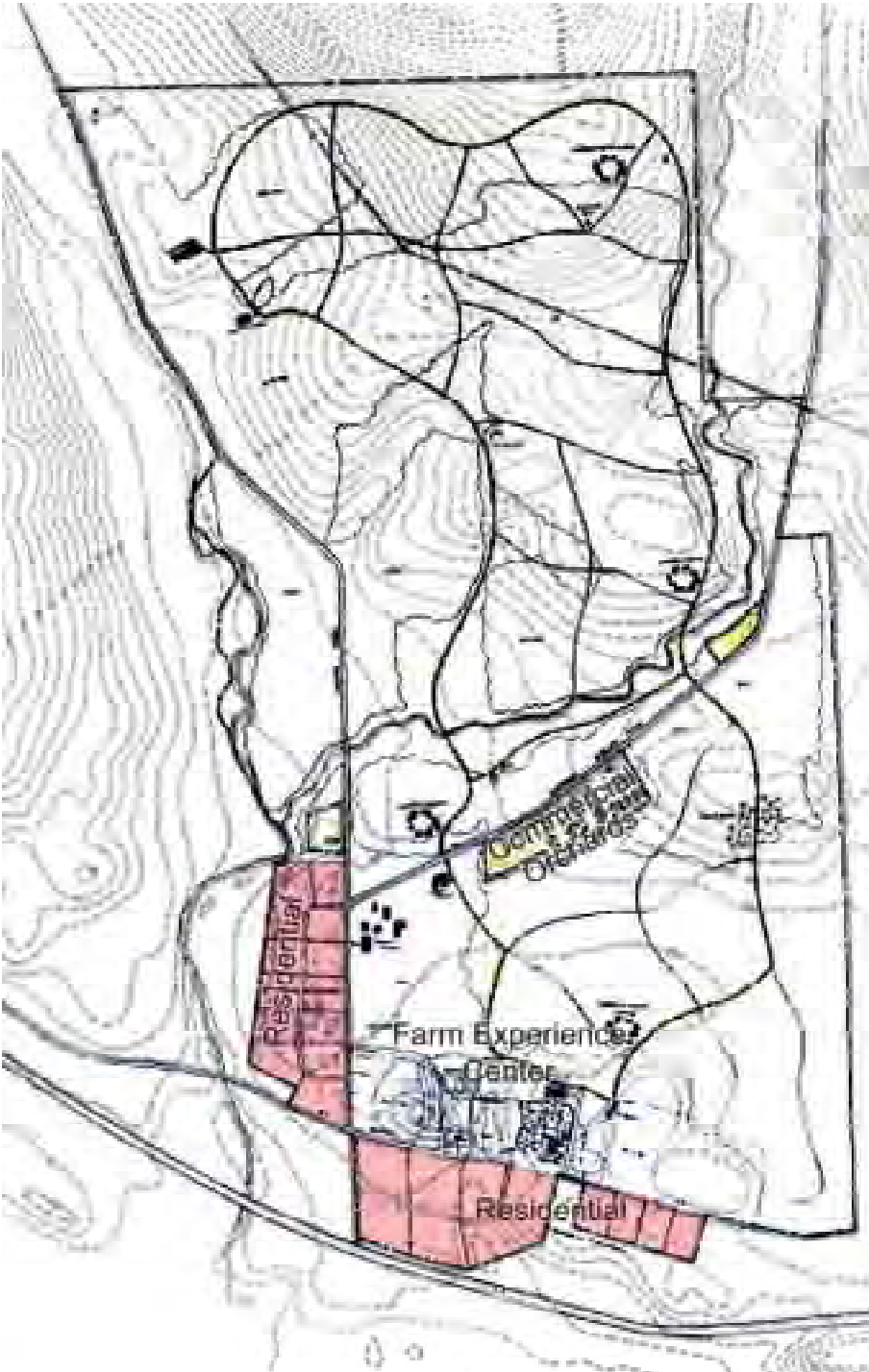
Site Photo: Dairy Herd



Site Photo: Clarke Home



# Clarke Site: The Clarke Farm Experience



## *Highlighted Incentives:*

- NYS & Federal Farmland Protection Programs
- Conservation Easements
- Nonprofit status of managing organization
- EQIP or AMA Grazing Land Initiative assistance

Number of Lots: 24

Lot Sizes: 2.0 to 4.5 acres

New Road Length: 4100 ft.

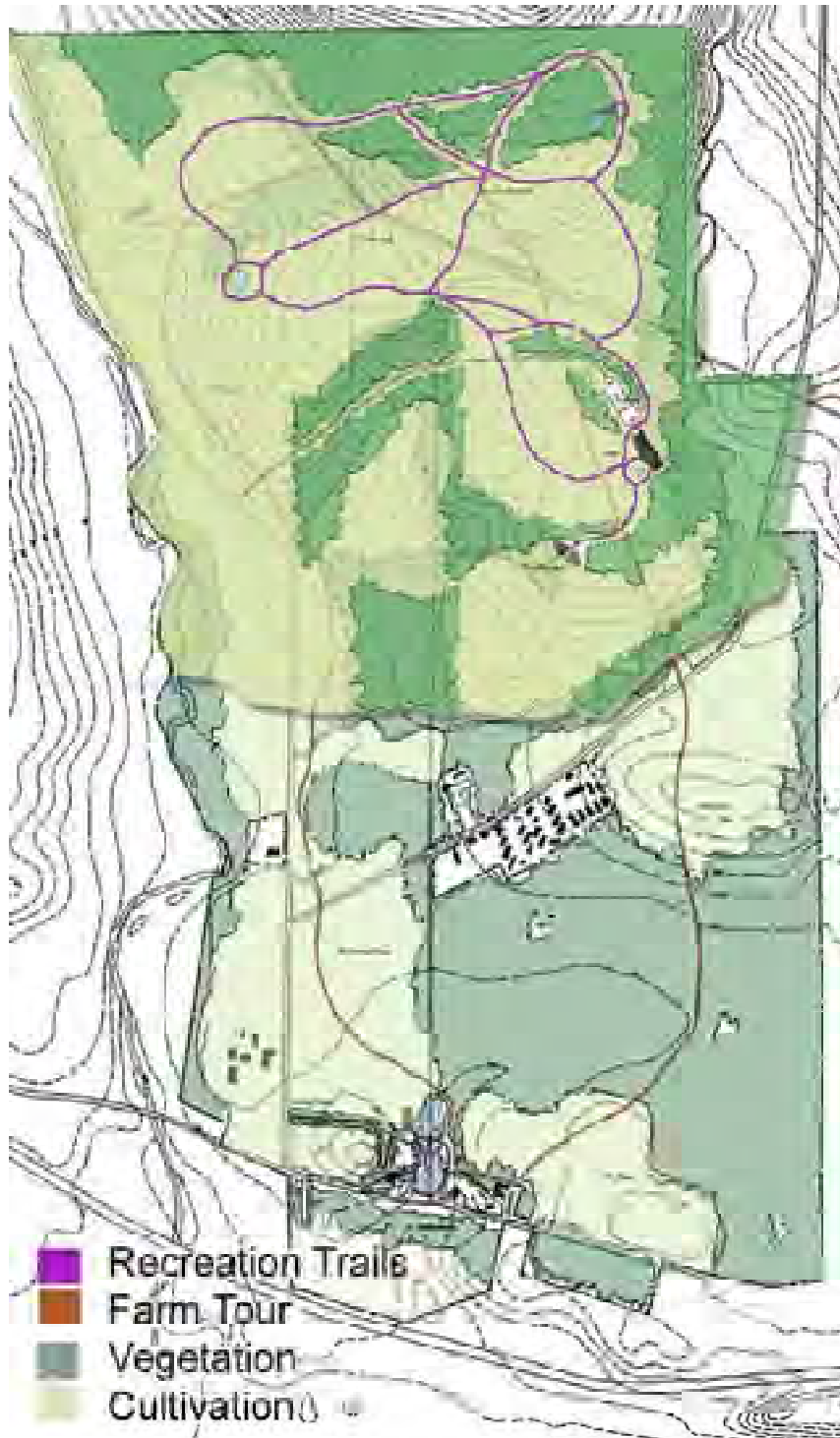
Road per lot: 171 ft. per lot

% of Land Conserved: 87%  
(546 acres out of 626)

## *Design overview:*

The proposal calls for the creation of a non-profit organization, The Clarke Farm Experience, to focus on providing families and children the opportunity to learn about life on a farm. The creation of an organized entity ensures a continuous and responsible stewardship of the land, which will help to keep the farm active and supported. The site plan includes cabins, an activity center, vegetable gardens, a dairy barn, and several craft houses, as well as maintaining the majority of the land as an active, productive farm. Some less agriculturally-productive land would be sold for housing to provide start-up funding for the organization.

## Clarke Site: Jacob Lowman Inn and Restaurant



### *Highlighted Incentives:*

- Conservation Easements
- EQIP or AMA Grazing Land Initiative
- Wildlife Habitat Incentives Program
- NYS & Federal Farmland Protection Programs
- Economic development supported by future I-86

### *Design overview:*

Capitalizing on the historic value and character of the existing homes on the site, the proposal calls for converting the 1839 George Lowman home into an Inn for overnight guests, and the 1819 Jacob Lowman Sr. home into a restaurant. The two functions would be linked not only to one another, but also to a new lodge for conferences and retreats, a trail system for recreation, and an extensive active farm, preserved through cooperation with the Finger Lakes Land Trust. The farmland could be worked by the site's owner or leased to neighboring farmers to keep it in cultivation.

## Clarke Site: Lowman Estate and Heritage Farms



### *Highlighted Incentives:*

- Cooperation with existing organizations
- Conservation Easements
- NYS & Federal Farmland Protection Programs
- CRP: Streamside Buffers
- Potential support funds for environmental education program

### *Design overview:*

Aiming to keep the land open and agriculturally viable, this design proposes cooperation with the non-profit organization Land Link or the National Farm Transition Network. The owner can lease or sell portions of the land to other farmers, while keeping other pastures open for interpretive use, such as pedestrian trails, historical interpretation, and hands-on opportunities to engage the public in the operation of the farm and the rich history of the site.

The buildings on the land which are currently not in active use will be restored and put to use. Also, an area has been set aside for development as a farmers' market, and other areas will be used to demonstrate various horticultural and ecologically sound practices.

# Clarke Site: Community Supported Agriculture



## *Highlighted Incentives:*

- NYS & Federal Farmland Protection Programs
- Financial predictability of a CSA program
- EQIP or AMA Grazing Land Initiative
- Conservation Easements
- Sale of commercially-viable land

Number of Lots: 9

Lot Sizes: 3.0 to 4.0 acres

New Road Length: 3600 ft.

Road per lot: 400 ft. per lot

% of Land Conserved: 96%  
(604 acres out of 626)

## *Design overview:*

A “CSA”, or Community Supported Agriculture, is an arrangement between a farmer and paying members in which the members buy a share at the beginning of the year, covering the production costs of the farm in return for a weekly allotment of the harvest. This design turns the southern, crop-friendly portion of the farm into a CSA, while keeping the rest as a grass-fed dairy farm. In addition, a lot development is proposed off Murphy Road at the west, and the students suggested selling the land near the future interstate for commercial development.



## Clarke Site: Bicentennial Farm Network



### *Highlighted Incentives:*

- Potential tourism network and support
- Conservation easement
- Potential historic preservation support
- Commercial proposal supported by main road
- NYS & Federal Farmland Protection Programs

### *Design overview:*

At the core of this proposal is the suggestion that the Lowman/Clarke farm join forces with the other Bicentennial Farms of New York to create a new statewide tourism attraction as part of New York's image. The increase in tourism would support the expansion of the dairy farm, and the preservation of the historic value and structures of the site. Commercial opportunities compatible with the farm are also suggested: a pick-your-own business of berries and tree fruits, the rental of the refurbished oldest barns for celebrations, and the lease of a small lot along the road to the south for commercial use (proposed are a gas station and a dairy store).

## 11: Good Design - Boor Site

### *Site Introduction:*

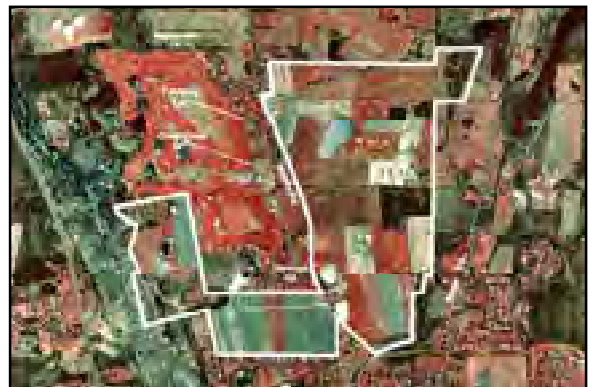
A dairy and feed farm of over 450 acres in the town of Horseheads (Chemung County), David Boor's property has a number of notable features. The site is nearly divided into three distinct portions by the Soaring Eagles golf course which it bounds on three sides. In the western portion of the site, the usable land is constrained by about 25 acres of the Horsehead Marsh, an extensive wetland area. In addition, the western area is the site of a large gravel mine. The southern portion, which links the two areas, is an open agricultural field. The larger, eastern portion of the site, which is nearly two-thirds of the land area, boasts a network of farm fields, the Boor farmhouse and barns, the site's steepest slopes, and an 8-acre pond. The entire property is pressured by residential development expanding northward from the Village and southward along NYS Routes 13 and 14.

Given the agricultural history of the area and the current socioeconomic and cultural trends, the students felt that the site was best suited for a mixed-use development combining new residential uses with the preservation of open space.

### *Site Analysis:*



Slope and Soil Suitability



Significant Features



Overall Analysis



View of the 8-Acre Pond

## Boor Site: Catharine Creek Cemetery



### *Design overview:*

This proposal takes advantage of the large, scenic pond to form the centerpiece for a 160-acre garden cemetery, inspired by the Mount Auburn cemetery in Cambridge, Mass. Siting this cemetery on the less than prime agricultural land, the design also takes advantage of the site's highest point in the northeast corner for a monument and lookout point. As the western land is cut off by the wetlands, the proposal recommends selling it. 35 acres of the site are divided into residential lots compatible with the homes immediately to their south, and the balance of the land is slated to remain in active dairy farm use.

### *Highlighted Incentives:*

- Wildlife Habitat Improvement Program
- Conservation Easements
- NYS & Federal Farmland Prot. Programs
- Wetlands Reserve Program
- Cons. Res. Program: Streamside Buffers

Number of Lots: 16

Lot Sizes: 2.0 to 2.5 acres

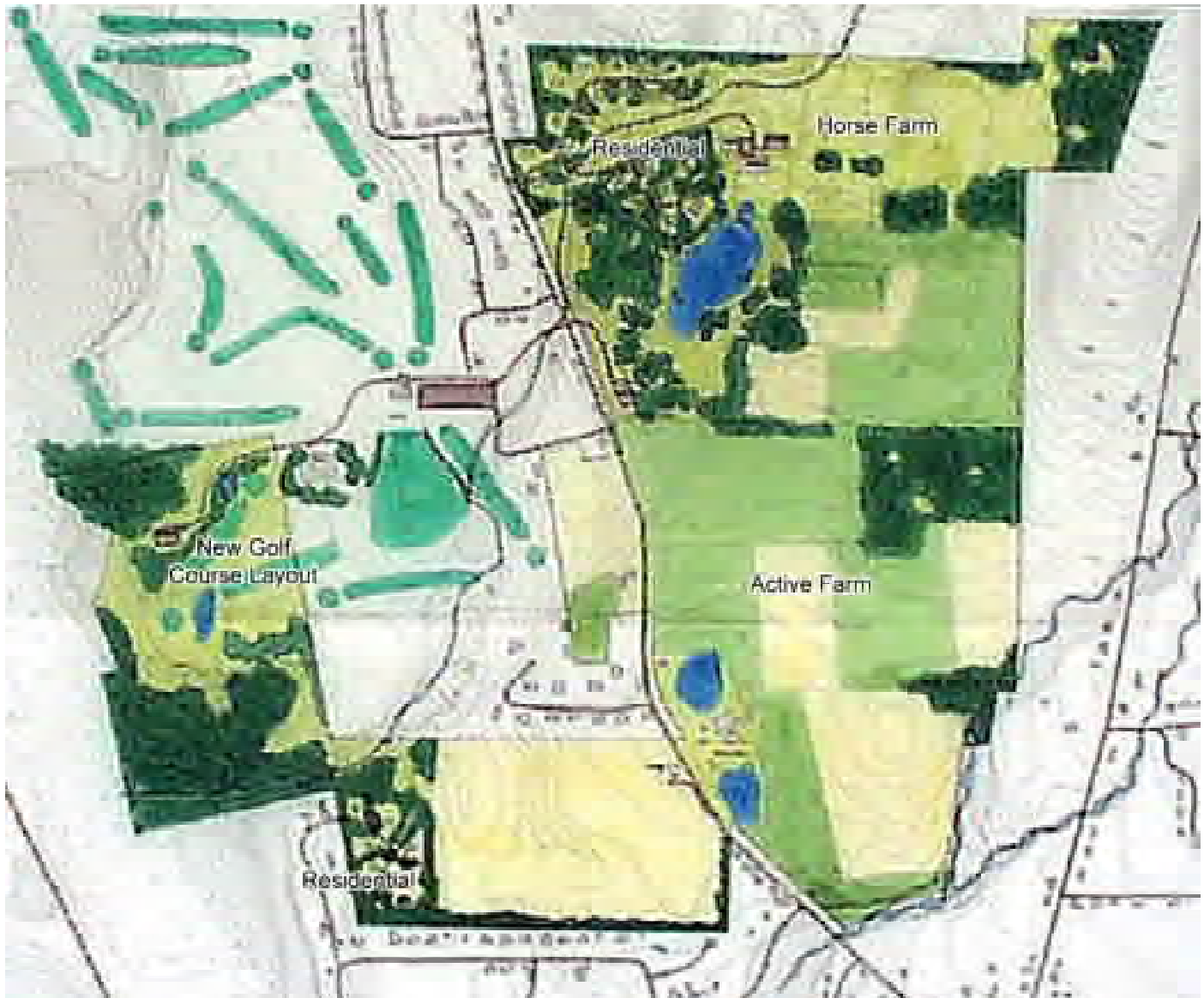
% of Land Conserved: 91%

New Road (Res): 2600 ft

Road Per Lot: 163 ft. per lot

(360 ac. out of 395 after sale)

## Boor Site: Greenspace Connections



### *Design overview:*

With the intent of connecting the agricultural open space with both the Catharine Valley Bike Trail and Mark Twain State Park (in which the golf course lies) and creating a band of green space conservation and stream buffer, this design begins by selling or donating the western wetland portion of the site to the State for park use. The Park is also extended across Middle Road to the large pond, creating a recreational waterfront area. To the north, a residential development organized around a horse farm is proposed, and a second smaller development lies in the southwest corner of the site. The remainder of the land remains in farming.

### *Highlighted Incentives:*

- Conservation Easements
- Wetlands Reserve Program
- Homeowners' Association
- NYS & Federal Farmland Prot. Programs

Number of Lots: 27

Lot Sizes: 1.0 to 3.5 acres

% of Land Conserved: 87%

New Road Length: 2600 ft.

Road per lot: 108 ft. per lot

(435 acres out of 465)



## Boor Site: Compact Village Developments



### *Design overview:*

While taking care to protect the wetland and preserve the prime agricultural land as a continued dairy farm, this proposal creates a dense community setting nestled into the vegetation and the topography. The development, which includes a community park on the shores of the pond and is bordered by buffer strips, also borrows the views of the surrounding golf course and the preserved dairy farm. In addition, the design protects the stream running through it with a buffer strip, and connects the areas with the wetland and the creek below through a trail system.

### *Highlighted Incentives:*

- Cons. Res. Program: Streamside Buffers
- Wetlands Reserve Program
- NYS & Fed. Farmland Protection Programs
- Homeowners' Association

Number of Lots: 100

Lot Sizes: 1.3 to 4.0 acres

% of Land Conserved: 43%

New Road Length: 18,900 ft.

Road per lot: 100 ft. per lot

(202 acres out of 465)

## Boor Site: The Boor Equestrian Reserve



### *Design overview:*

As part of a homeowners' association, the residents of the lots proposed in the northern half of the farm will have access to an equestrian center. This center will consist of horse stabling facilities, a riding track, a community center, open pastures, and a path system that includes riding and hiking trails, land for picnicking, and recreational spaces around the central pond.

The area surrounding the gravel mine is also reclaimed as residential, built around a central green space with access paths to both the golf course and the Catharine Valley Trail. The remaining land in the lower half of the farm and the southern section will continue to be productive as a heifer replacement operation.

### *Highlighted Incentives:*

- Cons. Res. Program: Streamside Buffers
- Wetlands Reserve Program
- Homeowners' Association
- Wildlife Habitat Improvement Program

Number of Lots: 80

Lot Sizes: 1.0 to 2.5 acres

% of Land Conserved: 72%

New Road Length: 11,000 ft.

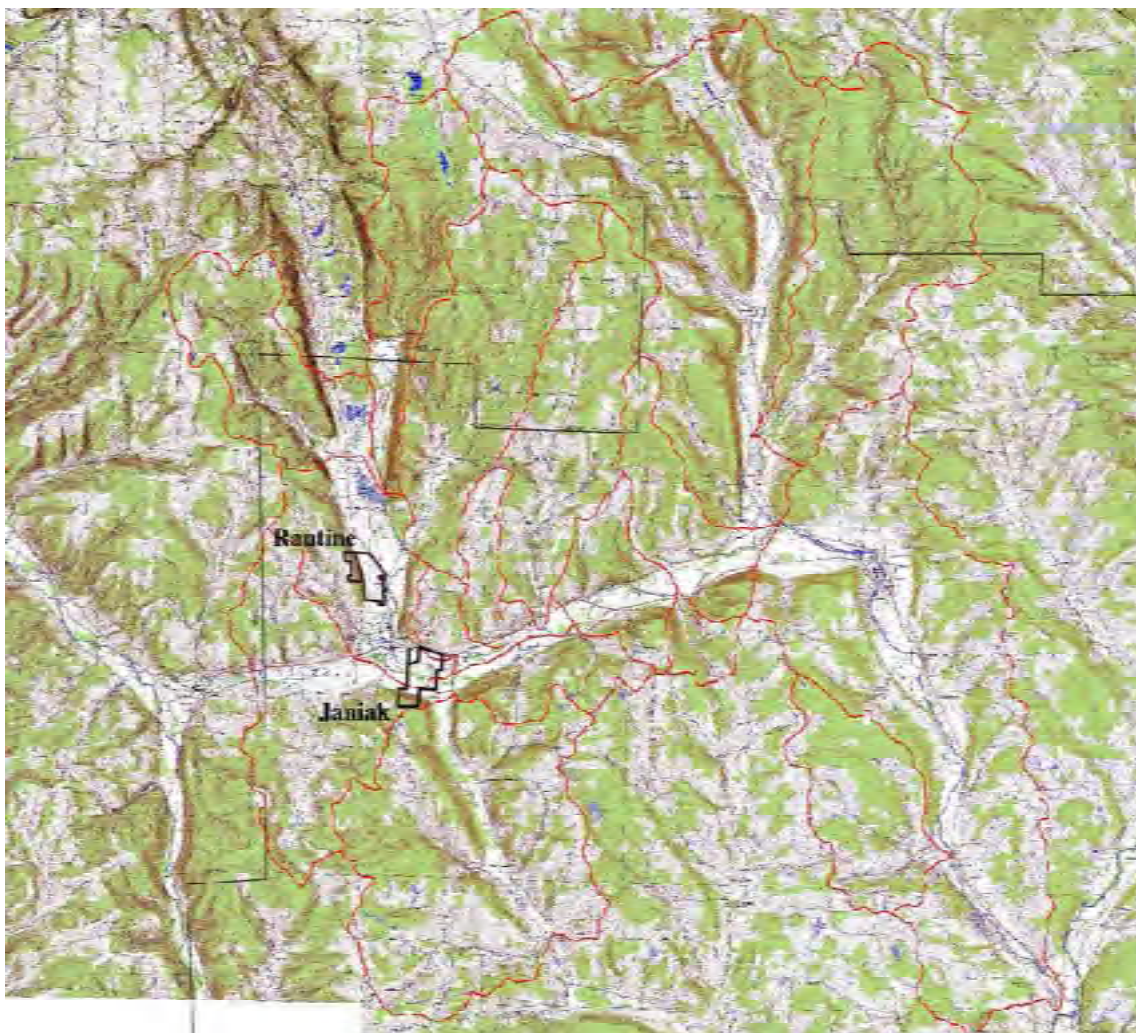
Road per lot: 142 ft. per lot

(335 acres out of 465)

## Tioga County, Fall 2002

The Janiak and Rautine properties fall within the Catatonk Creek Watershed, which encompasses more than 96,000 acres in the headwaters of the Susquehanna River in Tioga County, N.Y. Residents of the watershed formed the Citizens for the Catatonk Creek in the wake of major flooding during the mid-1990's in an effort to better understand their environment and what needed to be done to protect and preserve it. They undertook a comprehensive watershed plan, published in January 2002, which can be found online on the Upper Susquehanna Coalition website at <http://www.u-s-c.org/html/documents/CatatonkStrategicPlan.pdf>. As expected, flooding, gravel deposition, streambank erosion, and nutrient loading (due to agricultural runoff) were identified as priority issues.

The Plan suggests that wetlands play a vital role in flood reduction, stating that in the watershed. Students were thus challenged to create designs which fit into this Strategic Plan by alleviating flooding concerns and/or protecting the watershed.



The Catatonk Creek Watershed divided into sub-watersheds, and our selected sites. Rautine falls within the Main Catatonk watershed, while Janiak overlaps several.





View of a reclaimed gravel mine pond at the Porter site, ready for the next stage - housing.

allowed mining while protecting farmland and natural resources, and to do so in a way that allows for concurrent development. Students looked at examples of such projects already underway. The Porter's Sand and Gravel Company has reclaimed one of their mines in Barton for a lake and future housing sites, and have also reclaimed areas of their main site for the family residence, farm, and a recreation area for their employees. In addition, students toured "The Links" golf course in Apalachin, which is also built upon a reclaimed gravel mine.

For these projects, staging - the order of operations, the locations for the heavy equipment to be used in gravel mining, and the appropriate locations for dumping the overburden (the leftover soils) from the mines - is essential. In addition to its obvious financial benefit of allowing concurrent development with the mining (thus permitting a faster financial return), staging considerations can greatly impact both the shape of a project and its impacts on its surroundings. To this end, we've chosen to focus the additional space on each page to explaining how each project team saw their design as developing over the years.



The students in the Fall'02 class tour "The Links" golf course.



Routine Farm neighbors - Staging and management are essential.

We also note in the text the use of management techniques, such as the creation of wetland areas for flood control and wildlife habitat, stream buffer areas for protection of the waterways, careful placement of spoils out of the floodplain area, and a concern for the visual impacts on the surrounding community, mitigated through the use of vegetative screening and created earthen berms. In these ways, the projects consider and address both the visual effects and the noise of the gravel mining, and the environmental concerns raised by the Plan and their own projects, in a way that maintains the integrity of the rural environment.



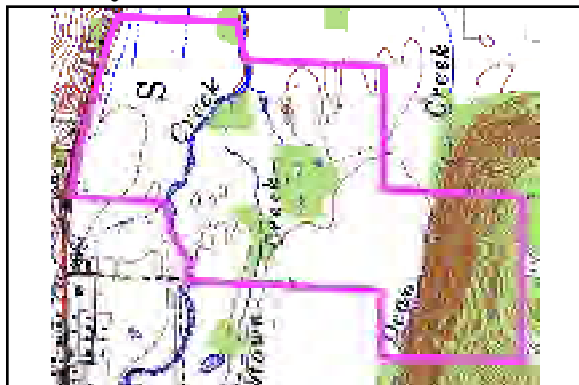
## 12: Good Design - Janiak Site

### *Site Introduction:*

Pat and Penny Janiak's 273-acre parcel in the town of Spencer falls within the Dean and Catatonk Creek sub-watersheds of the Catatonk Creek area. It is presently a dairy farm, used primarily as grazing land and for growing corn for cattle feed. The owners are interested in exploring the land's potential for gravel mining. In addition, their new homesite overlooks the property, so protecting the aesthetic appeal is critical. The questions of what to do with the land once mining is complete, and how to maintain that visual appeal, were presented to the class.

The Janiak site has a number of characteristics which made it a particularly interesting project for the Rural Design Clinic. The site's high water table and the fact that most of the site lies within a flood plain limit the potential for significant building. The soils are nearly evenly divided into two groups, with significant differences in suitability for continued farming. Finally, the considerations of coordinating any development with the continued operation and future direction of gravel mining on the site provide an interesting challenge.

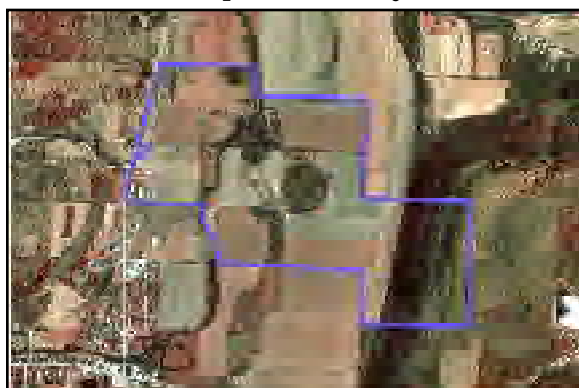
### *Site Analysis:*



Slope Suitability



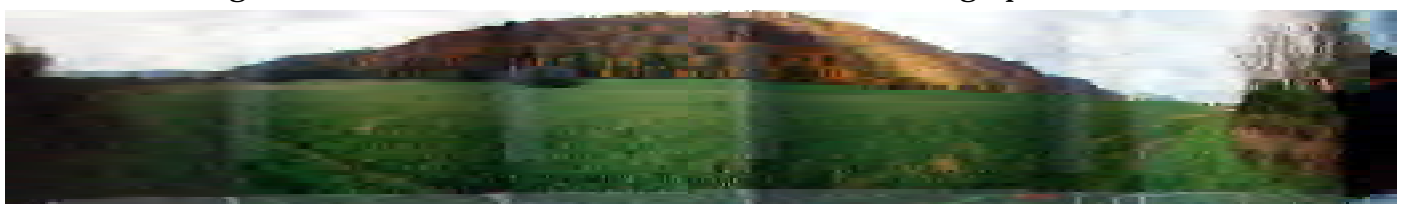
Soil Suitability



Significant Features



Photograph from Site Visit



# Janiak Site: Catatonk Golf Club



## Design overview:

Because a large portion of the site lies in a flood plain, making housing development impractical, this design chose to capitalize on the open, relatively level site by creating an 18-hole public golf course. The location is also 12 miles from its nearest competitor. The goal is to utilize the gravel-pit pond's irregular shape to create an intimate interaction between the course and the water, and to design a competitive, attractive course that will lure players from the distant population centers.

In addition, the program preserves nearly all of the land as open greenspace; the sole development areas are the clubhouse and its associated parking, and a maintenance facility.



### Stage 1:

- a: Access Road
- b: Open Driving Range
- c: First Mining Phase
- d: Begin Site Plantings

### Stage 2:

- a: Second Mining Phase - Overburden used for landforms
- b: Expand Plantings

### Stage 3:

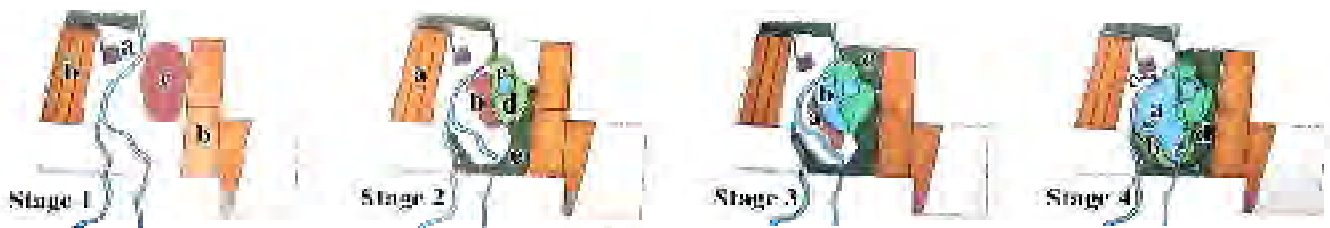
- a: Final Mining Phase
- b: Clubhouse & Pkg.
- c: Plant and open finished Golf Course

# Janiak Site: Nature Center and Biomass Farm



## Design overview:

Capturing the fertile soils with a biomass-farming operation, this proposal supplements the income from the gravel mine while buffering the surrounding area from it. Biomass farming is the planting and harvesting of renewable plant materials easily used as fuel products. One of the strengths of this is that it keeps a great deal of the land in agricultural production, even while the mining is going on in the center of the site. Once the mining is completed, the plan takes advantage of the lowered elevation to create wetland area and wildlife habitat. This amenity is supplemented by a nature center which also incorporates commercial ventures through a banquet hall and conference space. Finally, a trail system links the site together and provides for educational opportunity.



### Stage 1:

- a: Access Road & Parking
- b: Plant Biomass Fields
- c: First Stage of Mining

### Stage 2:

- a: Begin Biomass Harvests
- b: Second Stage of Mining
- c: Create Pond
- d: Wetlands Plantings
- e: Reforestation Plantings

### Stage 3:

- a: Third Stage of Mining
- b: Enlarge Pond
- c: Expand Reforestation

### Stage 4:

- a: Flood Mine for Pond
- b: Wetland Planting
- c: Construct Buildings
- d: Path System Creation

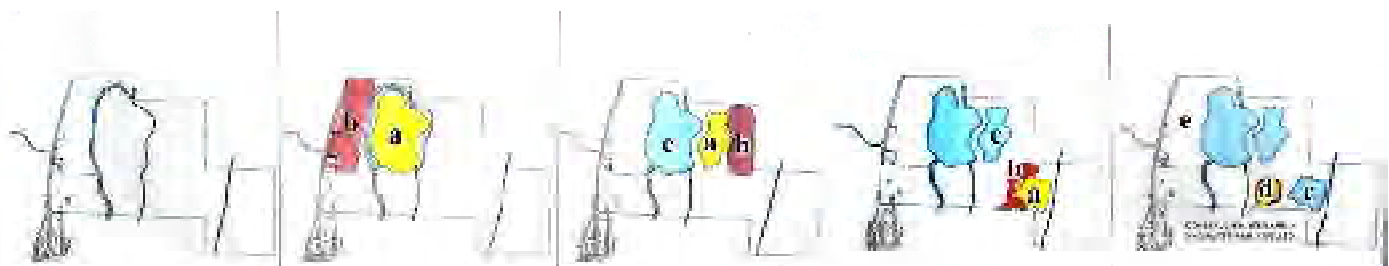
## Janiak Site: Rural Equestrian Retreat



### *Design overview:*

Focusing on the development of an equestrian center combining boarding and riding facilities, on- and off-site trails, and pasture space, this proposal seeks to maintain the land's rural character through the presence of horses, the planting of woodland-reclamation efforts, and the preservation of open pasture areas. The project also maximizes gravel mining opportunities and generates an aesthetic opportunity by working around the large ponds that mining can create. Overburden from the ponds is used to build up land for the equestrian uses.

With wetlands, a picnic area, woodland trails, a jumping trail, and loops around the ponds, a variety of pedestrian and equestrian uses are proposed which connect with an existing snowmobile trail, reinforce the land's rural character, and provide for varied uses.



**Stage 1:**  
Temporary Stream  
Diversion Measures

**Stage 2:**  
a: Gravel Excavation  
b: Overburden Dist.

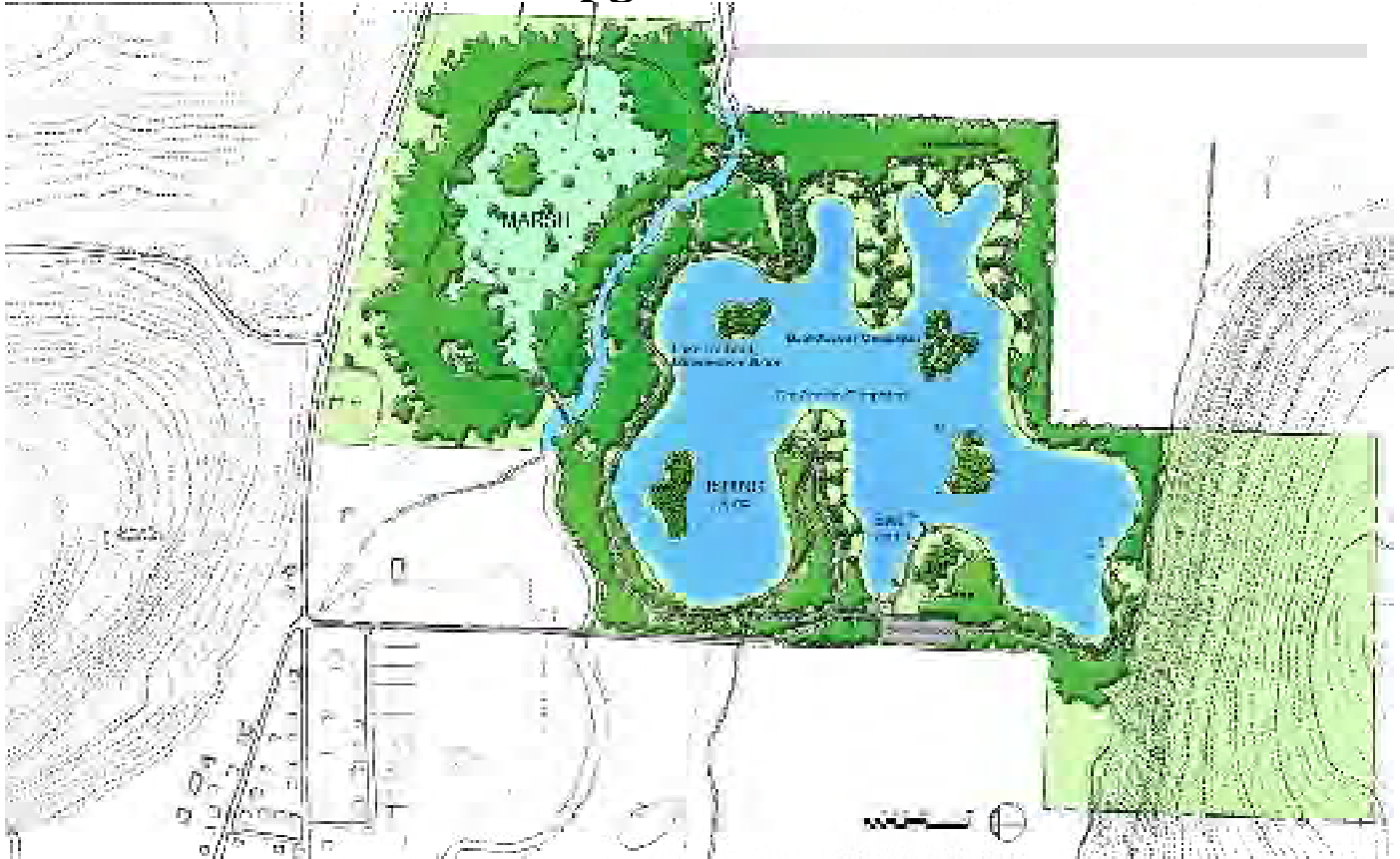
**Stage 3:**  
a: Gravel Excavation  
b: Overburden Dist.  
c: Pond Creation

**Stage 4:**  
a: Gravel Excavation  
b: Overburden Dist.  
c: Pond Creation

**Stage 5:**  
c: Pond Creation  
d: Wetland Formation  
e: Facilities Built

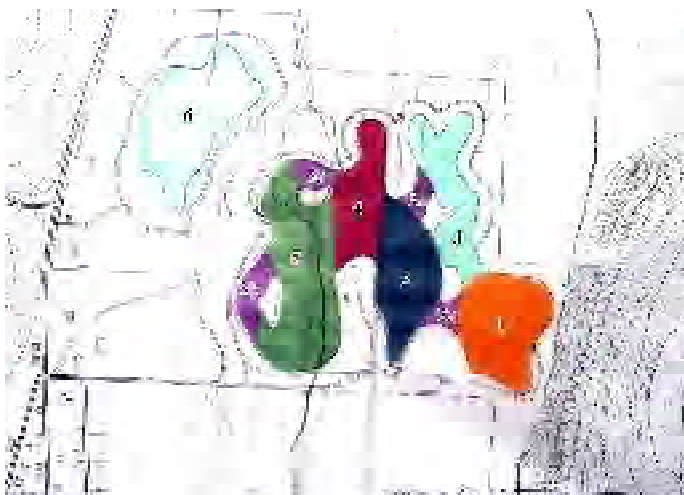


## Janiak Site: A Rustic Campground



### *Design overview:*

Through the gravel mining process, this project proposes the creation of a single, large pond carefully crafted for a rustic appearance and the impression of secluded areas. Around the shores, a number of campsites are created (some accessible to cars, some only by boat or canoe), as well as nature trails, picnic areas, and other recreational opportunities. With a lakeside trail, an area of conserved marshland, fishing possibilities, and more, the result is the feeling of a wilderness campground just outside of town. Also, this plan protects the original stream corridor from development; Wetlands Reserve Program incentives would be applicable.



### Staging Plan:

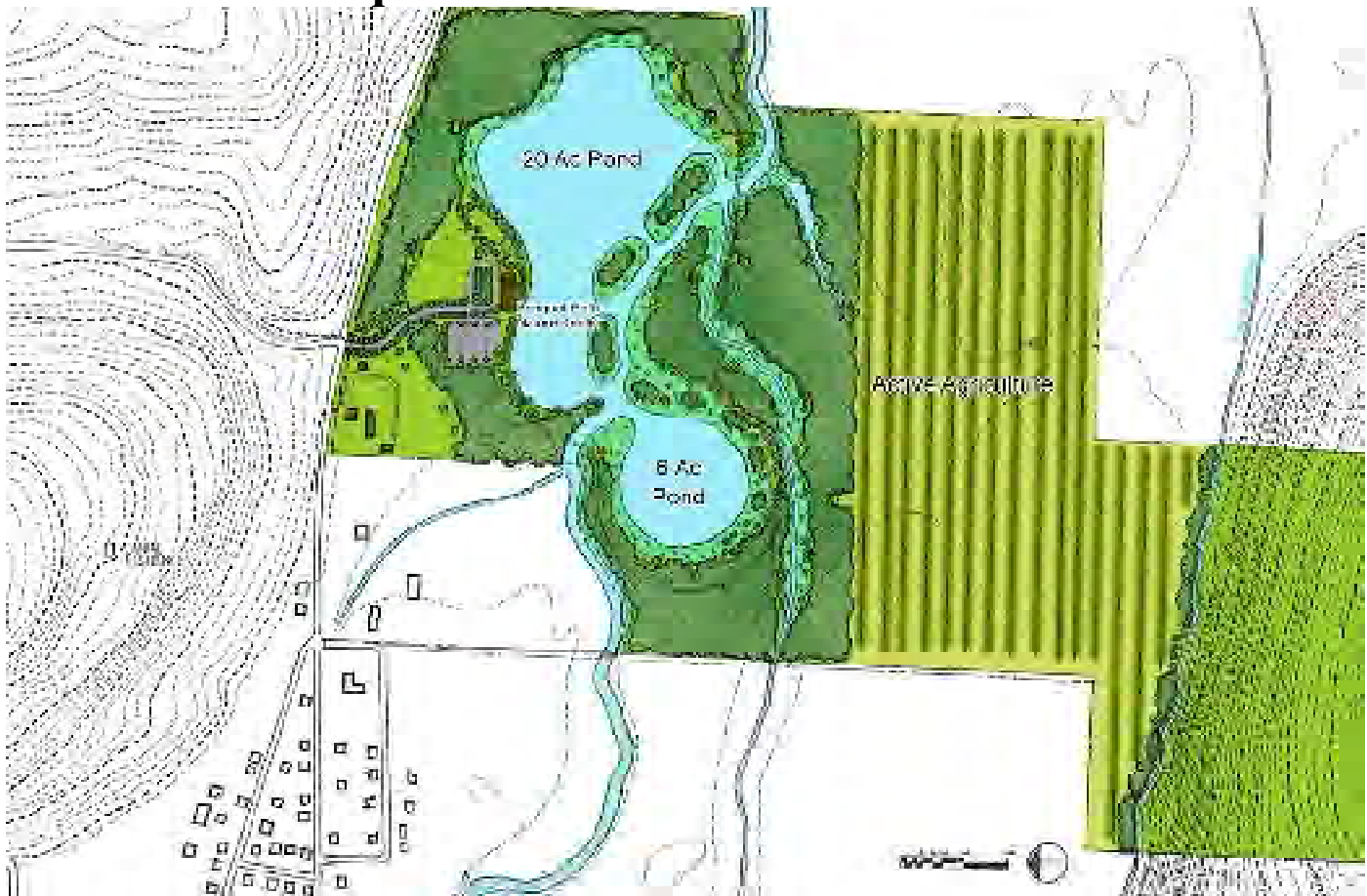
The most important areas of the landscape design are in the rear of the property.

Thus, mining begins in the northwest corner (1) and moves inward according to the phase numbers. (Sub-phases represent areas where an island will be constructed by connecting back to a completed section.)

Planting along the perimeter of the lake will take place immediately upon completion of mining in that area.

The final phase will be the mining of the marsh area, where depth is limited to 2 feet below water table to maintain a marsh habitat after completion.

# Janiak Site: Banquet Hall and Nature Center



## Design overview:

In addition to a banquet and function hall facility, providing a commercial focus to the site, this project uses techniques incorporating the gravel mining operation into the existing waterways to expedite the process and to leave a pair of ponds with a series of islands. These islands and ponds are then planted to create a variety of habitats and conditions which lend themselves to a nature center - golden weeping willows arching over the ponds, a boardwalk through a created wetland, willows and sycamores standing at the water's edge, wooded outdoor areas, paths using some of the gravel from the site, and so on. A large portion of the site is also maintained as active agricultural land, some of which could go to support the banquet hall and give it a unique flair.



### Stage 1:

- a: Continue Dairy Farm
- b: 5-Acre Mine
- c: Berm for Mitigation
- d: Reforestation Planting



### Stage 2:

- a: Begin Large Mine
- b: New Access Road
- c: Flood Initial Mine



### Stage 3:

- a: Complete Large Mine
- b: Create Sledding Hill From Overburden
- c: Begin Mine Flooding



### Stage 4:

- a: Complete Pond System
- b: Construct Buildings
- c: Create Path System

## 13: Good Design - Rautine Site

### *Site Introduction:*

Arvo and Susan Rautine wish to continue farming on their 240 acres of land within the Main Catatonk Creek sub-watershed for as long as possible. When they retire, they hope to live on a portion of their property enjoying fishing with their grandchildren in the new ponds designed as part of this project. Development on the remainder of the land must be compatible with both their neighbors along their northern property boundary and with the larger Spencer community.

As the students learned, the site has a variety of characteristics suitable for a number of uses. About 35% of the site is good farmland, while the majority of the valley bottom land is underlain with gravel. The steep hillsides to the west are forested. At the foot of the hill is an active rail line, a significant factor to be considered in any design scheme. The property's road frontage is County Route 96, a high traffic corridor between Spencer and Ithaca to the north. Curb cuts and visual impact are, therefore, both important concerns.

### *Site Analysis:*



Slope Suitability



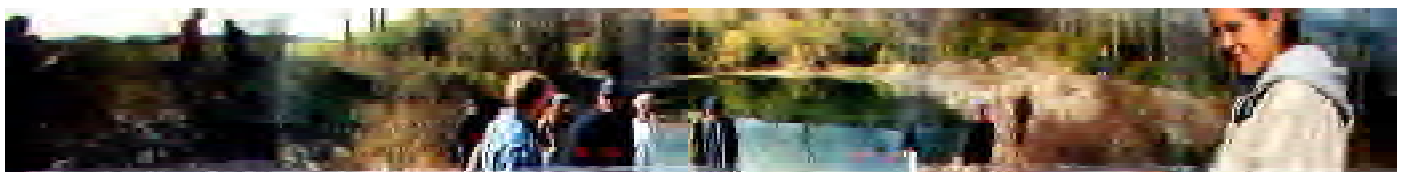
Soil Suitability



Significant Features



Site Photograph



## Routine Site: Viewsheds and Greenspace



### *Design overview:*

In addition to its nearly 30 acres of pond that are the product of the proposed gravel mining, this proposal includes a large tract of continued agricultural land connected to the proposed parcel retained for the Routines, which serve as a buffer from neighboring parcels. The Routine parcel also includes a private pond. The marshland is preserved and enhanced, framing a small park and community center, and lending privacy from the main road. The residential community is entered from an interior hamlet street rather than a new curbcut into the busy county road. Within the resulting neighborhood, the houses are carefully clusteres around cul-de-sacs to create a feeling of community in front while preserving individual, private viewsheds out over the ponds and the hills. From each home, vistas are carved through the woodland that present an uninterrupted view and a feeling of privacy and seclusion.



### Stages of Development:

- a: Gravel Mine and Pond Creation for Routine Family Retirement Site
- b: Mass Plantings of Trees To Buffer Future Development (need time to mature)
- c: Gravel Mining and Pond Creation on Main Development Site
- d: Wetlands and Greenspace Creation
- e: Construction of Roads, Community Building, and Houses.

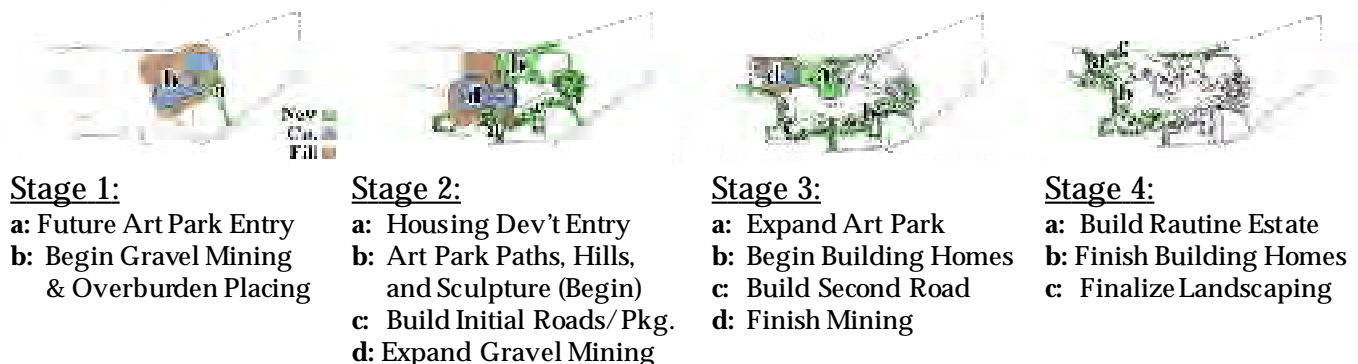


# Routine Site: Art Park and Community

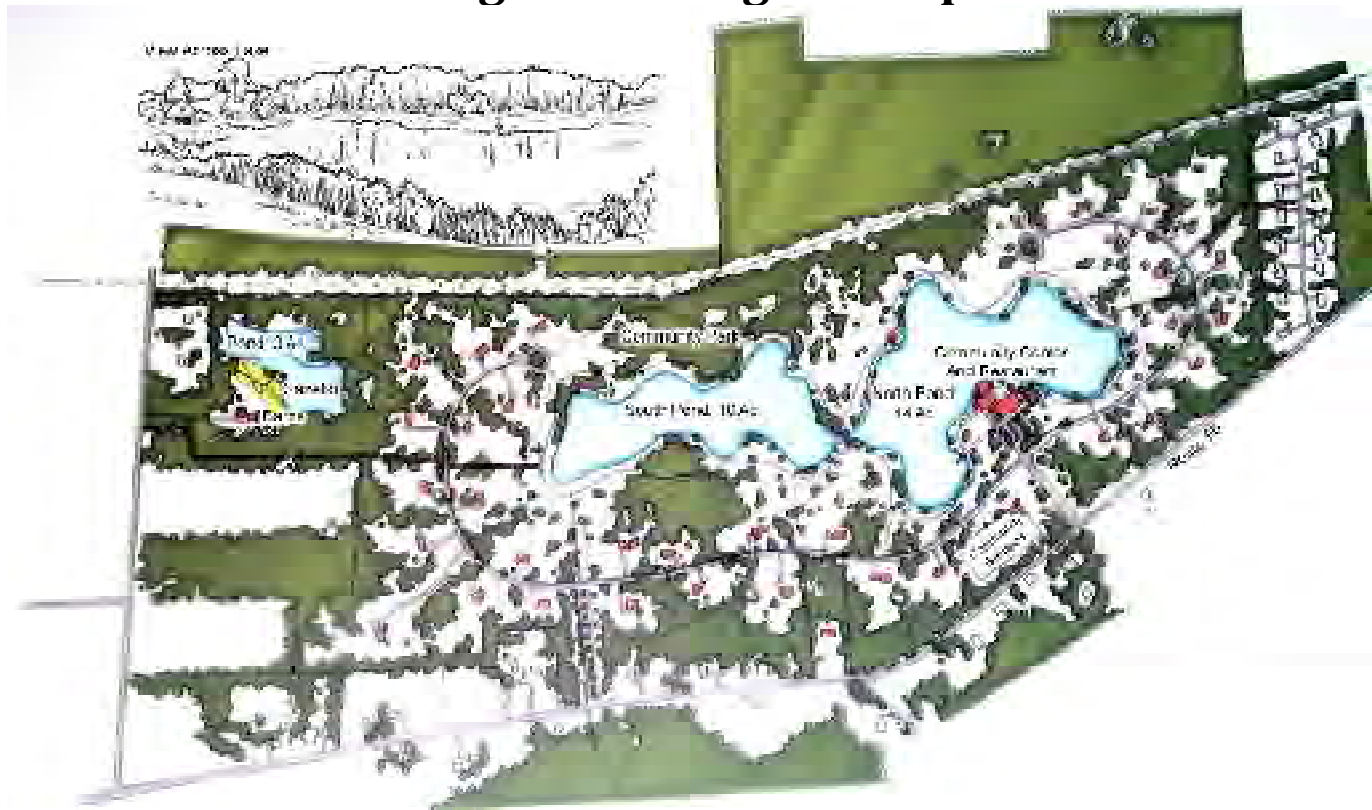


## Design overview:

This proposal seeks not only to maintain the rural character of the site, but also to create a community-centered attraction. This is done by blending three major uses on the site – farming, a housing development geared toward retirees, and an outdoor sculpture park/restaurant – while balancing traffic across three main access points. The Art Park capitalizes on excess soil from gravel extraction by creating a landscape of hills, views and terraces as a setting for the outdoor sculpture. The 30 acre Art Park, managed by the homeowner’s association, buffers the community from the railroad. An Art Center and Restaurant serves as the staging point for the experience. Meanwhile the views from the 24 duplexes look out over the 40 acre lake at the park, enhancing their value and attractiveness while maintaining a tight, cohesive development on about 40 acres. The existing farm buildings and agricultural land is maintained through an easement creating a permanent green space of about 65 acres for the neighbors to the north. The new roads are parkways with heavy landscaping behind the existing properties on Route 96.



# Routine Site: Housing Conserving Greenspace



## Design overview:

With an aim to create a buffer between a somewhat-dense development and its abutters, this plan reforests a large percentage of the site with new woodland. These created greenspaces are then protected by conservation easements in order to conserve a large portion of the unbuilt land. A path system connects the resulting residences and the woodlands together with the created ponds. The end result offsets density with privacy and create a “good neighbor” for the Routine’s retirement property in the south as well as the surrounding community. In addition, it encompasses a variety of lots with rural character and water views.



### Stage 1:

- a: Construct Staging Areas
- b: Rough-Grade Roads
- c: Evergreen Tree Planting



### Stage 4:

- a: Begin South Lake
- b: Area for Overburden
- c: Sell lots and build roads and community features.



### Stage 2:

- a: Begin Gravel Mining in North Lake and Routine Pond Areas.
- b: Area for Overburden



### Stage 5:

- a: Plant and Finish Area Surrounding South Lake
- b: Sell remaining North Lake area lots



### Stage 3:

- a: Construct Routine Home
- b: Plant And Finish Area Surrounding North Lake



### Stage 6:

- a: Sell lots around South Lake; build road as necessary
- b: Create path system

# Routine Site: Waterfront Property Development



## Design overview:

Capitalizing on the attractiveness of water, this project proposes an extensive, dense development on the shores of ponds created by the gravel-mining process. At the several main entry points, strong, tree-lined boulevards create a sense of place and entry into a subdivision of winding streets where nearly every unit has its own unique water view. While the project results in a large amount of road per unit due to the single-loading of homes to the outer edges of the parcel and the long unused entry drives, the open waterfront space left by this choice provides a path and community park system that encompasses the pond edges and connects the units with greenspace easements. The setback of the houses from the property boundaries could be further enhanced by the creation of heavier vegetated buffers along the county road in the areas where lots back up to it; this would help buffer the surrounding community from such a dense development that is somewhat out of character for the area.



### Stage 1:

- a: Staging Areas
- b: Begin Roads
- c: Tree Buffers
- d: Mine Future Routine Pond



### Stage 2:

- a: Begin Mining
- b: Overburden
- c: Build Routine Retirement Home



### Stage 3 :

- a: Plant First Pond
- b: Create Berms
- c: Mine 2nd Pond



### Stage 4:

- a: Continue Plants
- b: Extend Roads
- c: Begin Lot Sales



### Stage 5:

- a: Formal Entries
- b: Complete Roads
- c: Sell More Lots
- d: Begin Path and Park System



### Stage 6:

- a: Finish Paths
- b: Sell Final Lots

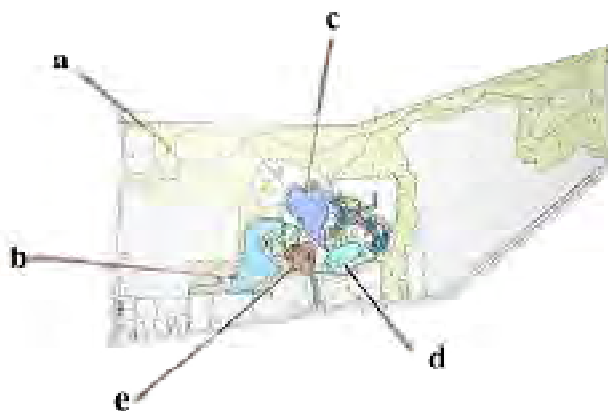
## Routine Site: “Greenville”: Sustainable Living Community



### *Design overview:*

Through condensing the development and focusing on sustainable techniques, this project proposes a residential community with ties to the larger Spencer community. By efficient selection of building materials, design of cojoined houses, orientation for maximum solar exposure, plantings for shade in the summer and protection in the winter, and a focus on maximizing pedestrian paths and minimizing paved roads, the project presents a model for environmentally-focused design.

The footpath system forms a series of nature trails and connects the large, preserved greenbelts around the site to the rest of the town, providing for a possible continuity of open space. Finally, the gravel mines become ponds for added scenic value, habitat, and amenity.



### Stages of Development:

- a: Begin Reforestation Plantings
- b: Dig South Pond Mine, and Begin Construction of Routine Residence
- c: Dig West Pond Mine, and Begin Construction of First Housing Cluster
- d: Dig East Pond Mine, and Begin Construction of Second Housing Cluster
- e: Build Restaurant Complex and Parking



## Cortland County, Spring 2003



Cortland County is an excellent setting for designing showcase properties for the Rural Design Workbook. Both the county and the local communities of Virgil and Homer, in which the two featured properties are located, have put in place a framework for agriculture and open space protection.

Cortland County government views agriculture as an industry which must be maintained, so they work hard to keep farms in business primarily through incentives, assistance in finding funding, and the opportunity to participate in state and federal Purchase of Development Rights (PDR) programs, described below. According to agricultural census data contained in the Town of Virgil comprehensive plan, in 1997 there were 452 farms in Cortland County with a total acreage of 120,838. These numbers represent a loss of about 13% of the county's 1992 farmland total of 138,620 acres in just five years. It is clear why the county is concerned about the loss of farmland.

Similar to a Conservation Easement, the Purchase of Development Rights is a legal transfer of the right to develop or build on land in perpetuity. The benefit to the purchaser (usually the state or federal government) is the guarantee that the land will not be developed and will be protected for its scenic value, as an open space buffer, as

active agriculture or for other natural resource values. For the landowner, the lowered property tax assessment and the income from the sale of development rights, both provide financial incentives for maintaining active agriculture on the land. Although funding through these highly competitive agricultural protection programs is limited, Cortland County actively supports applications from their best farms.



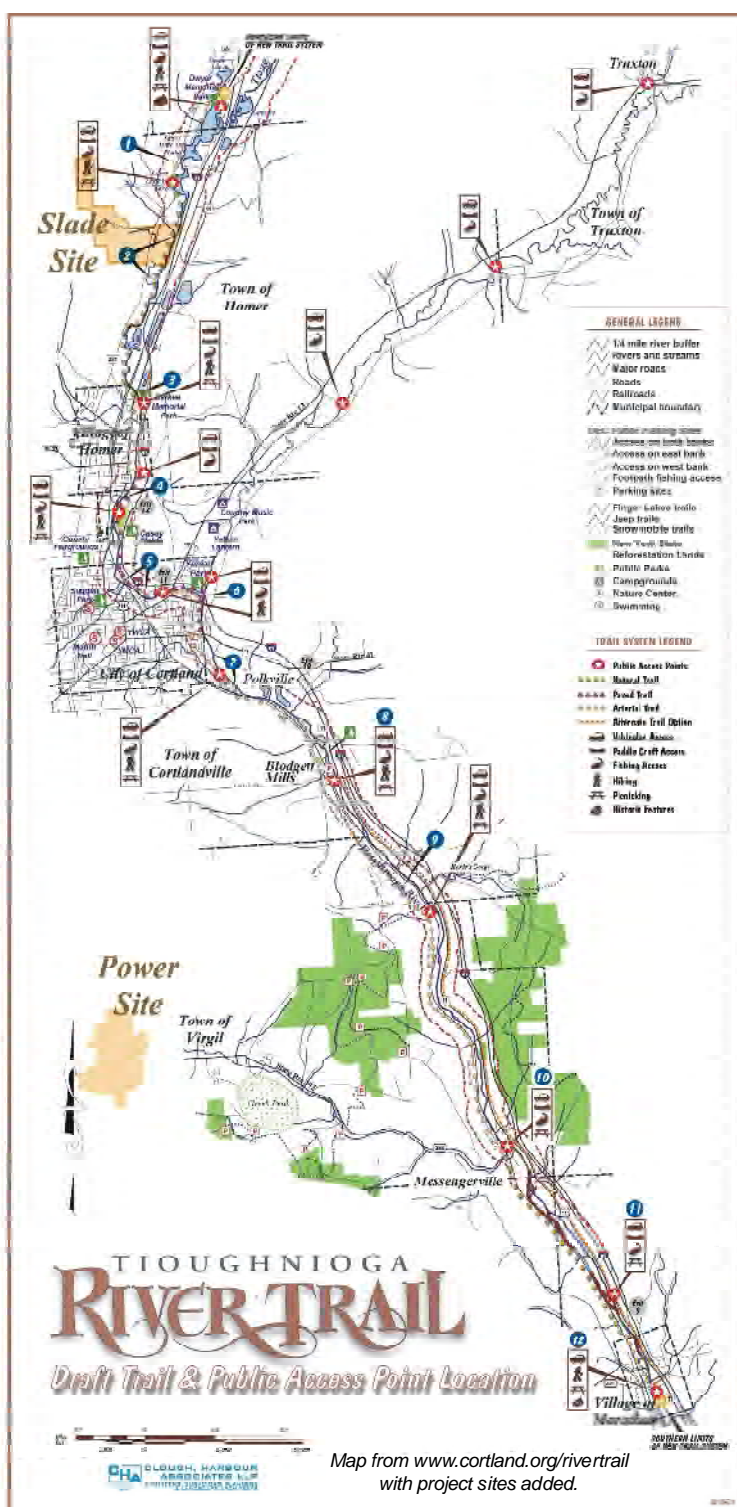
The large, open areas of agriculture are a prime candidate for PDR.



The Power's dairy herd is an example of the area's farming base.

Another county initiative is the Tioughnioga River Trail, a biking/hiking/cross-country skiing trail that passes through or near both of the project sites. The River Trail, located along existing roads and rail rights-of-way, connects Homer and Cortland and provides access to parks, historic and cultural sites, and the River along the way. Connecting to larger trail systems such as the Finger Lakes Trail, the Tioughnioga River Trail is an important open space protection/economic development tool. More information on the trail is available at: <http://www.cortland.org/rivertrail>.

On the local level, the Towns of Virgil and Homer both have recently adopted comprehensive plans. These plans shape a concise vision of the future for each town, establishing development goals and guidelines, designating areas for prime agricultural use and conservation protection, suggesting controls over density of development, and so forth. Both plans call on its citizens to take personal responsibility as good stewards of the land and to consider land use and infrastructure on a regional basis rather than simply within the town itself. One local restriction of note (given the previous chapters' focus) is that both towns are opposed to gravel mining at depths below the water table or in aquifer protection districts. Thus, mining cannot provide supplemental farm income.



Location on the Trail may support recreational uses on the Slade Farm.

The students were challenged to create thoughtful designs respectful of the limitations and issues raised by the towns' master plans, encouraged to consider connections to larger regional systems such as the River Trail, and asked to identify opportunities for the Purchase of Development Rights and other financial incentives to enable the long traditions of farming on both sites to continue into the future and preserve the rural character of Cortland County.

## 14: Good Design - Power Site

### *Site Introduction:*

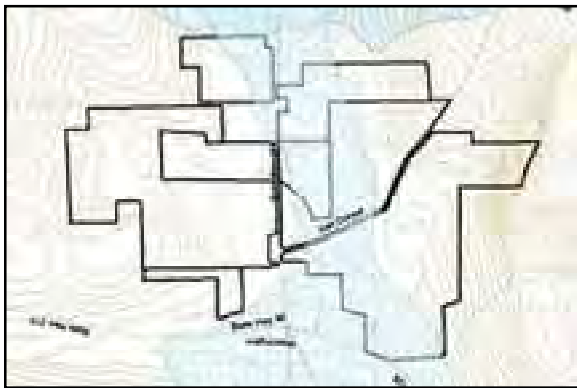
Gerald Power's property, flanking the Town of Virgil, is a family dairy farm with a long history of agriculture. Jerry is the second generation of the Power family to own and operate the farm. He now owns 600 head of cattle and 350 acres of cropland, and rents and operates another 350-450 acres a year. However, as is the case with so many farms, the next generation in the family is not interested in farming, and, as Mr. Power advances in age, he is increasingly concerned about the future of this richly diverse landscape.

Power Farms has been a participant in the Conservation Reserve Program and the USDA Environmental Quality Incentives Program for the Fall Creek Watershed. Through the funding from these programs, the family has installed various conservation practices, including 33.8 acres of new riparian buffers along Virgil Creek, and has received funding for manure storage practices which are currently in development. These measures help protect the water quality of Fall Creek, Cornell University's source of drinking water.

Jerry hopes to bolster the economic viability of the dairy operation without harming the environment. In addition, maintaining the farm's good-neighbor relationships with the hamlet of Virgil and the adjacent landowners is also a high priority.

The students took on the task of proposing projects that both complemented and enhanced the viability of the dairy operation while improving the overall health of the watershed.

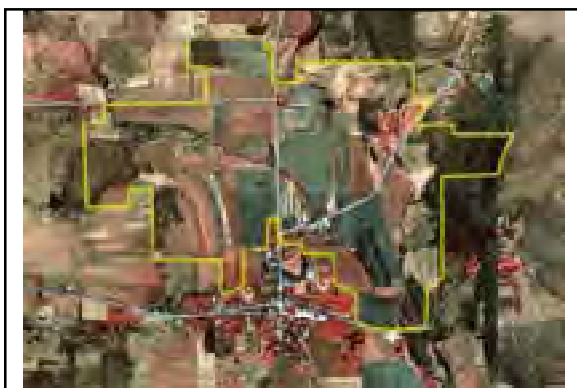
### *Site Analysis:*



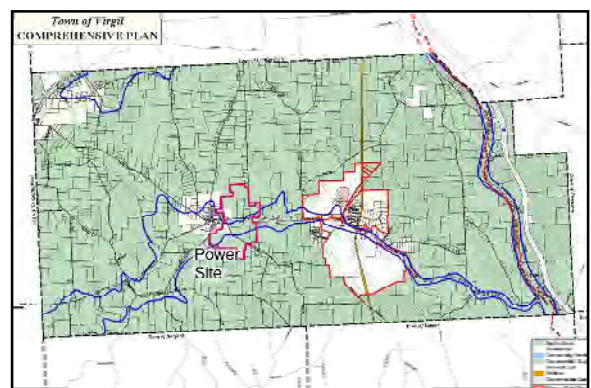
Site Topography



Soil Suitability



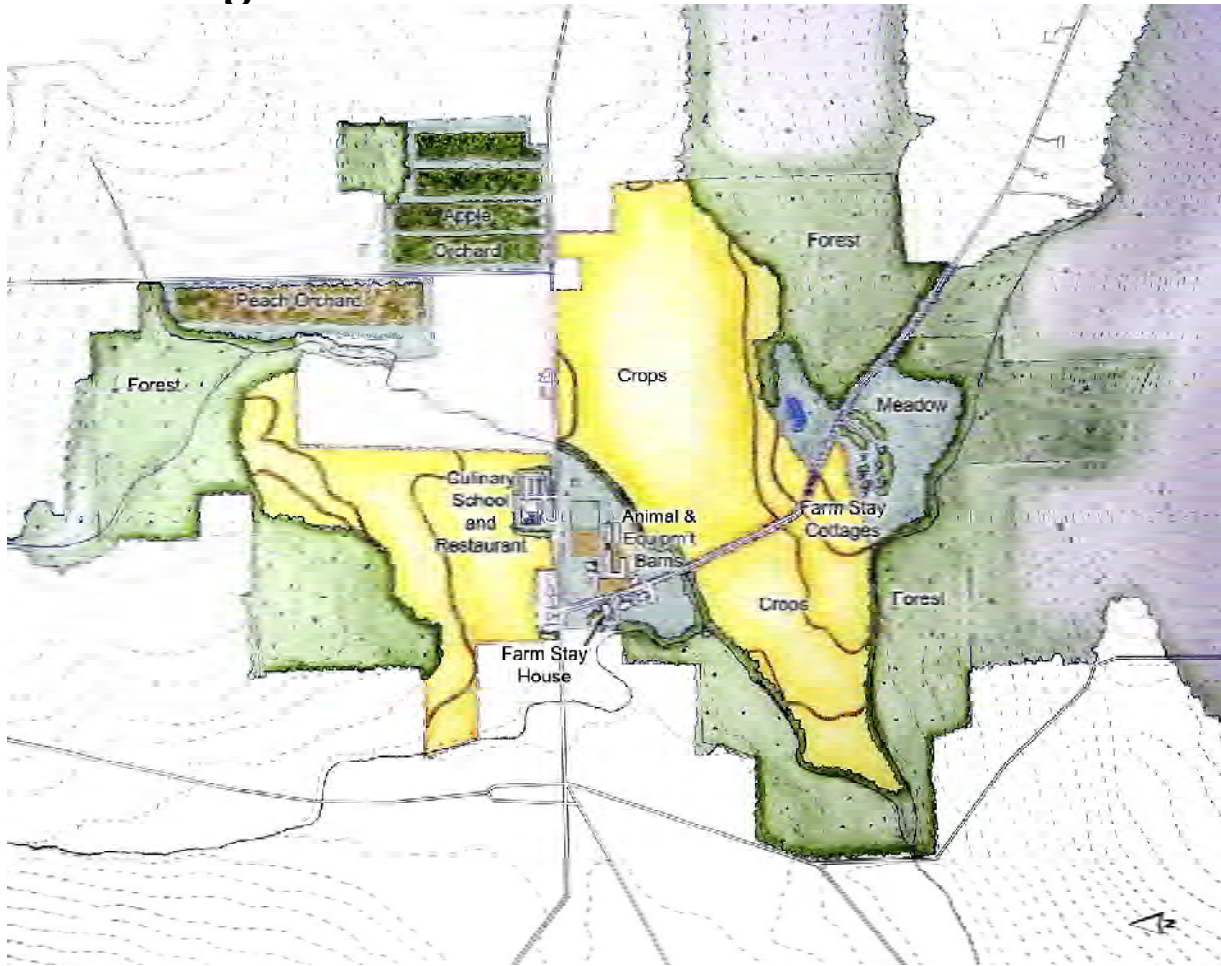
Significant Features



Virgil Comprehensive Plan



## Power Site: Agri-tourism



### *Design overview:*

Promoting the concept of agriculture-focused tourist activities, this project merges a bed-and-breakfast, tied into over 400 acres of working farm, with a culinary school and restaurant. With recreational amenities, riding trails, and educational opportunities connected to the farm, the “farm-stay” would be a tourist destination. The food raised, meanwhile, would be a vital component of the restaurant and the classes. The students looked at a number of existing, successful case studies of these ventures. They found that the synergy between the activities on the property increases the value of any one activity on its own, and provides an example of the sorts of innovative combinations that can make such a venture profitable, unique, and respectful of the rural character and continuity.



### *Highlighted Incentives:*

The Purchase of Development Rights on the site's 400 acres of farmland could provide the start-up funds to help build the restaurant or improve the existing buildings for the farmstay. The farm buildings will be renovated and added to as part of the agritourism program.



## Power Site: Heritage Farms



### *Design overview:*

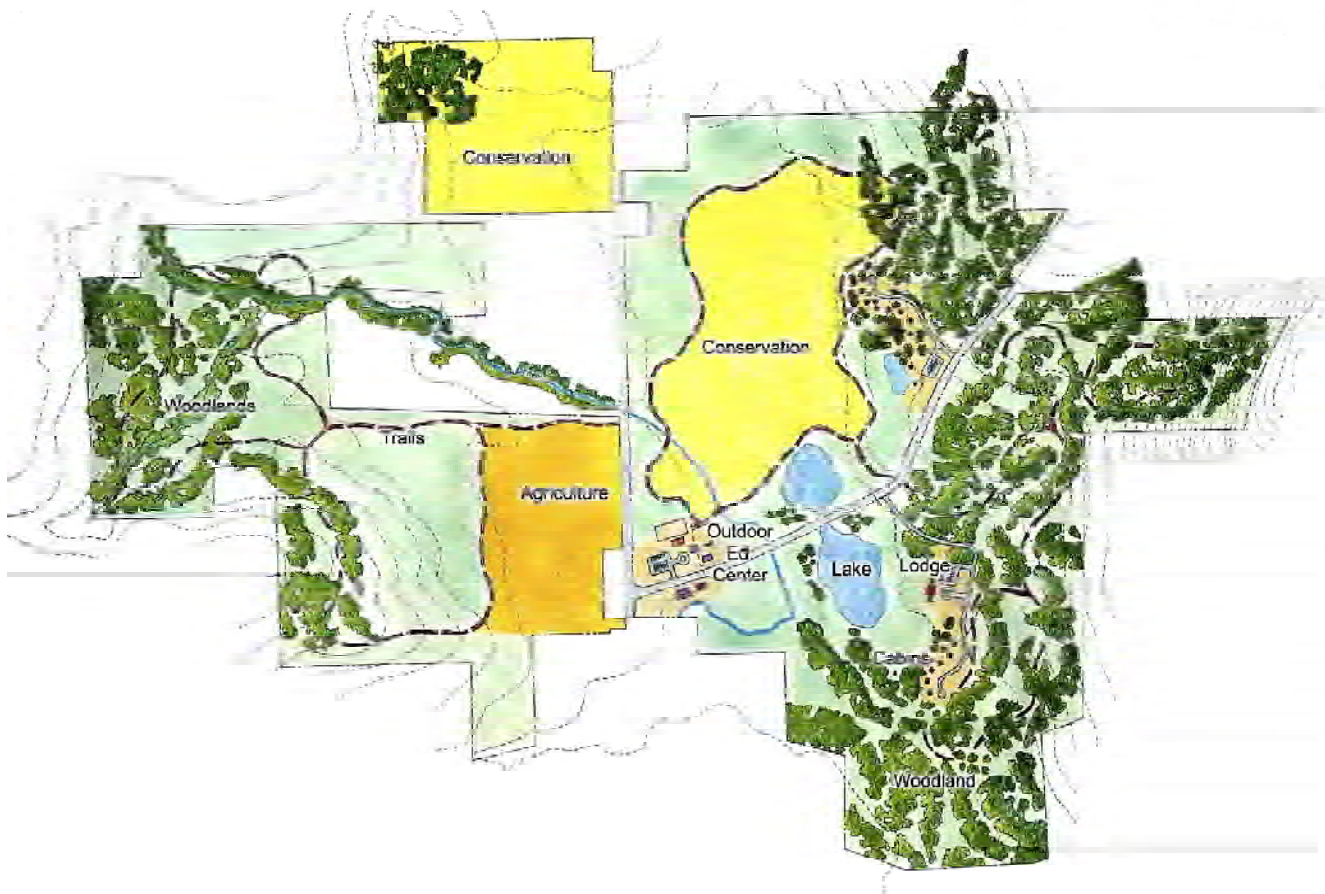
The switch to a smaller herd of cattle and an emphasis on farming heritage and quality product, particularly artisan-crafted specialty dairy products, forms the core of this project, providing a more manageable size and a niche market suited to the “heritage farm” concept. Also included is a Christmas tree farm and several swaths of preserved natural woodland. Locating an inn and cafe on some of the land not suited for agriculture allows further opportunity to market the products of the farm and provide an alternate source of income. In addition, it draws attention to the farm’s goals and message of preserving rural traditions and heritage. Finally, another portion of the non-farmable land is given over to a small residential development, the value of which is enhanced by the surrounding conservation.

### *Highlighted Incentives:*

Cash to start up the inn and cafe can be generated by selling the isolated parcel of about 30 acres for 12 single-family homes, and through Christmas tree sales. Using PDR on the remaining farmland also provides money to invest in heritage varieties of crops and fruit trees.



# Power Site: Outdoor Recreation Complex



## *Design overview:*

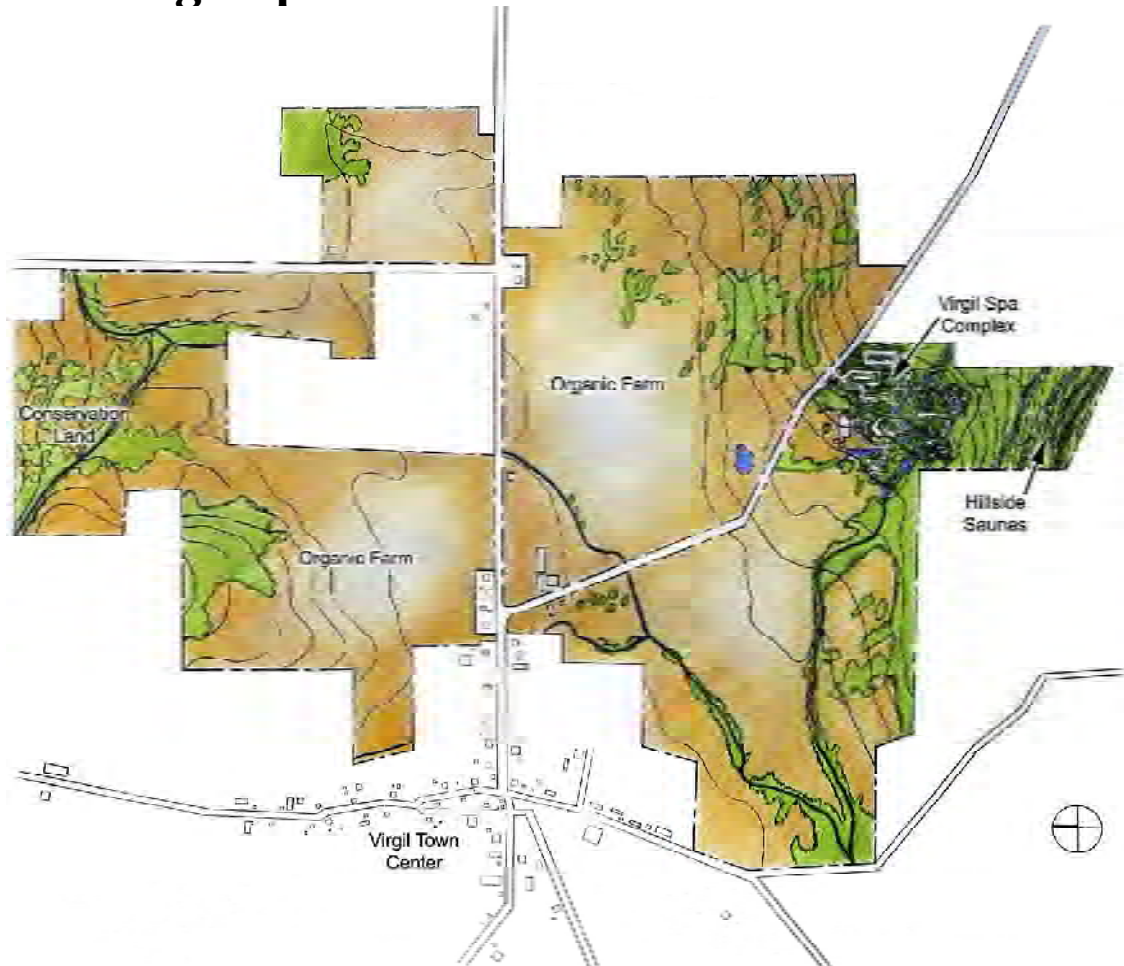
Utilizing the site's natural features, its varied terrain, and its vegetation (both existing and reclaimed), this project proposes an outdoor recreational complex boasting horseback and walking trails, picnic and day camping areas, a created lake, an outdoor education center and lodge, a ropes course and other extreme-sports facilities, silo climbing, and more. The facilities are based out of a conversion of the existing farmstead buildings along NYS Route 215 and new construction in that area. Except for this concentrated development of the farmhouses, all of the land along the road corridor will remain either in active farmland or conserved meadow, with only trails crossing it, thus protecting the rural character and the experience of the land for passersby.



## *Highlighted Incentives:*

The donation of a Conservation Easement on roughly 400 acres of open land, to be managed as meadow under the Wildlife Habitat Incentive Program, will maintain this land as open space for the recreation complex's trails.

## Power Site: Virgil Spa



### *Design overview:*

Capitalizing on the rural environment's sense of "being away from it all," this proposal focuses on the creation of a spa. The central themes of health and well-being extend into the surrounding farmland, which can be maintained as an active farm focusing on organic crop production. Outdoor activities, conservation and farming information sessions, and so on, augment the program. In addition, the spa's proximity to other activities in the region (Greek Peak's skiing and golf functions, a number of state parks, and the Tioughnioga Trail, among others) provide enough variety to enhance the spa's destination value. Finally, in addition to supplying the spa resort with food and herbs, the organic farm is proposed as a potential Community-Supported Agriculture venture (for greater income and stability).

### *Highlighted Incentives:*

As support for the spa complex, the organic farm could serve as a Community Subscription Agriculture (CSA) program, where members pre-purchase shares of the harvest for the season, then receive regular portions of the produce. For the farmer, this has the benefit of providing capital up front and a guaranteed market.





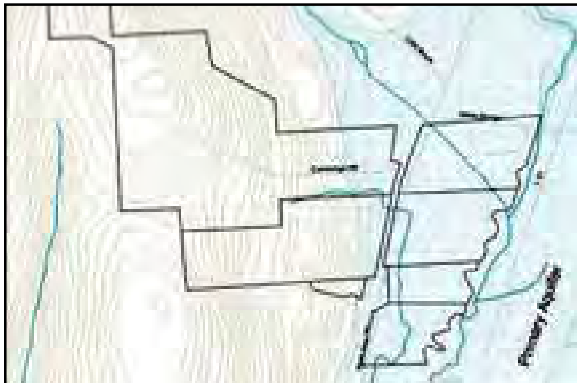
## 15: Good Design - Slade Site

### *Site Introduction:*

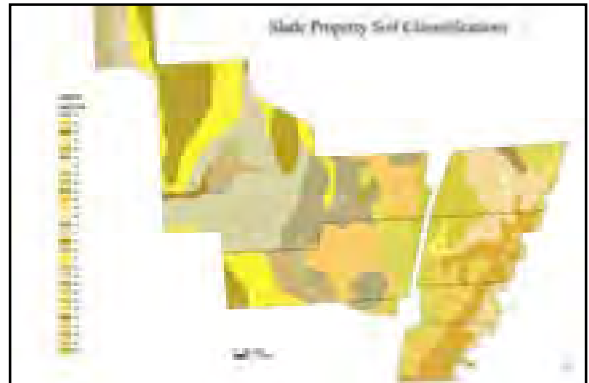
Gary Slade, his brother Chuck, and their families own this property in the Town of Homer, one of two dairy farms in the immediate area. The Slade Farm encompasses over 800 acres of agricultural land and is located along Route 281. The surrounding area is varied, containing forest, agricultural land, and residential homes. Particularly significant is the site's connection with the proposed Tioughnioga River Trail, which will pass just along the eastern edge of the site. Tying into it will connect the site's green spaces to a much greater network, an ecologically important goal.

Perched on a sloping hillside and easily visible from much of the Tioughnioga valley below and from routes 81 and 11, the site's long history of farming is one of the defining visual aspects of the land. Thus, the visual impacts of any development on the area's overall rural character are even more critical than usual, leading to its high suitability for Purchase of Development Rights. Furthermore, the views from the site are spectacular, and offer an overlook of the entire area.

### *Site Analysis:*



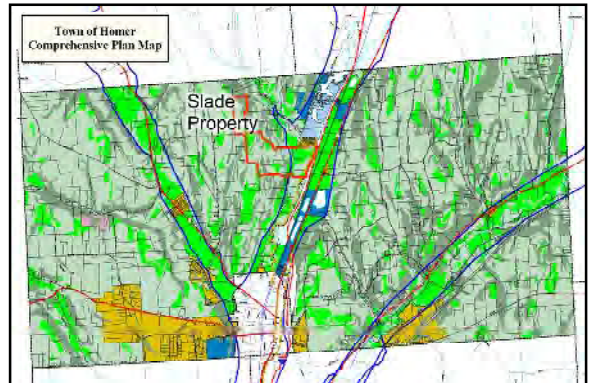
Site Topography



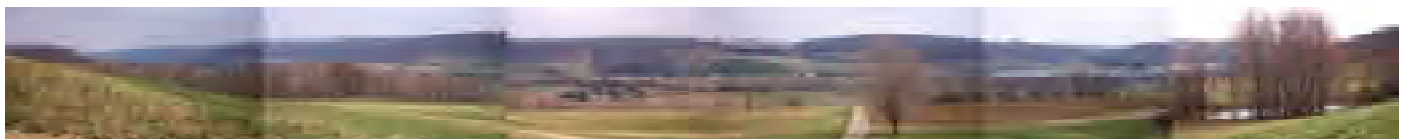
Soil Suitability



Significant Features

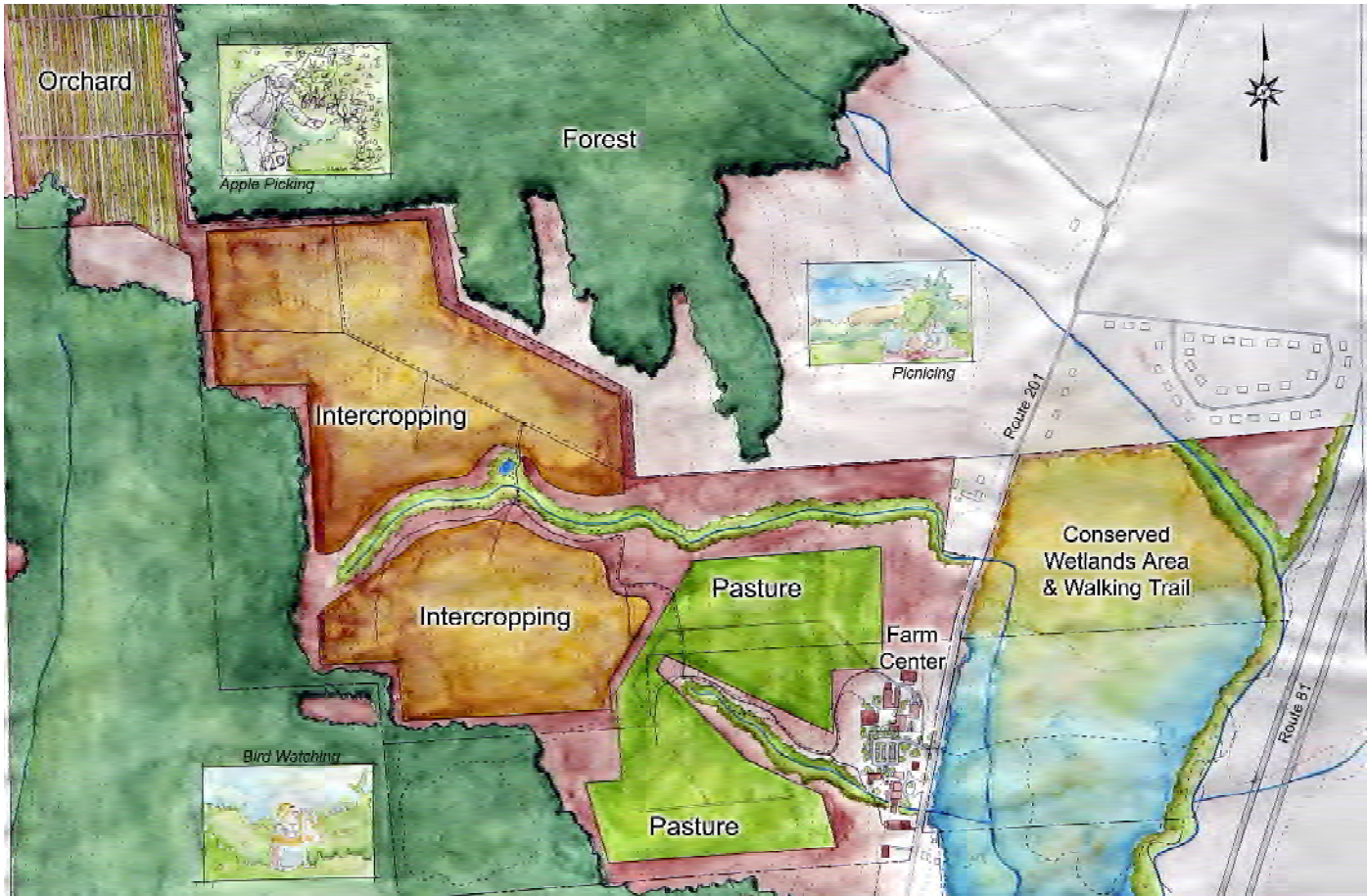


Homer Comprehensive Plan





# Slade Site: Agricultural Community



## *Design overview:*

With the goal of preserving the rural character by maintaining active agriculture where feasible while accommodating development, this proposal redefines the farm as a farmers' co-op agricultural community. Through an organic system of inter-cropping, a number of farmers would produce a variety of crops (fruit crops are particularly well-suited to this land), all marketed together. Meanwhile, other large areas are to be kept open, as continued pastureland and as a recreational amenity. An on-site market provides an outlet for the products, and a connected visitors' center and educational facility provides an opportunity to see these unusual, efficient agricultural practices in action and learn about the benefits, as well as a link to the other educational opportunities provided by the protected wetlands and woodlands.

## *Highlighted Incentives:*

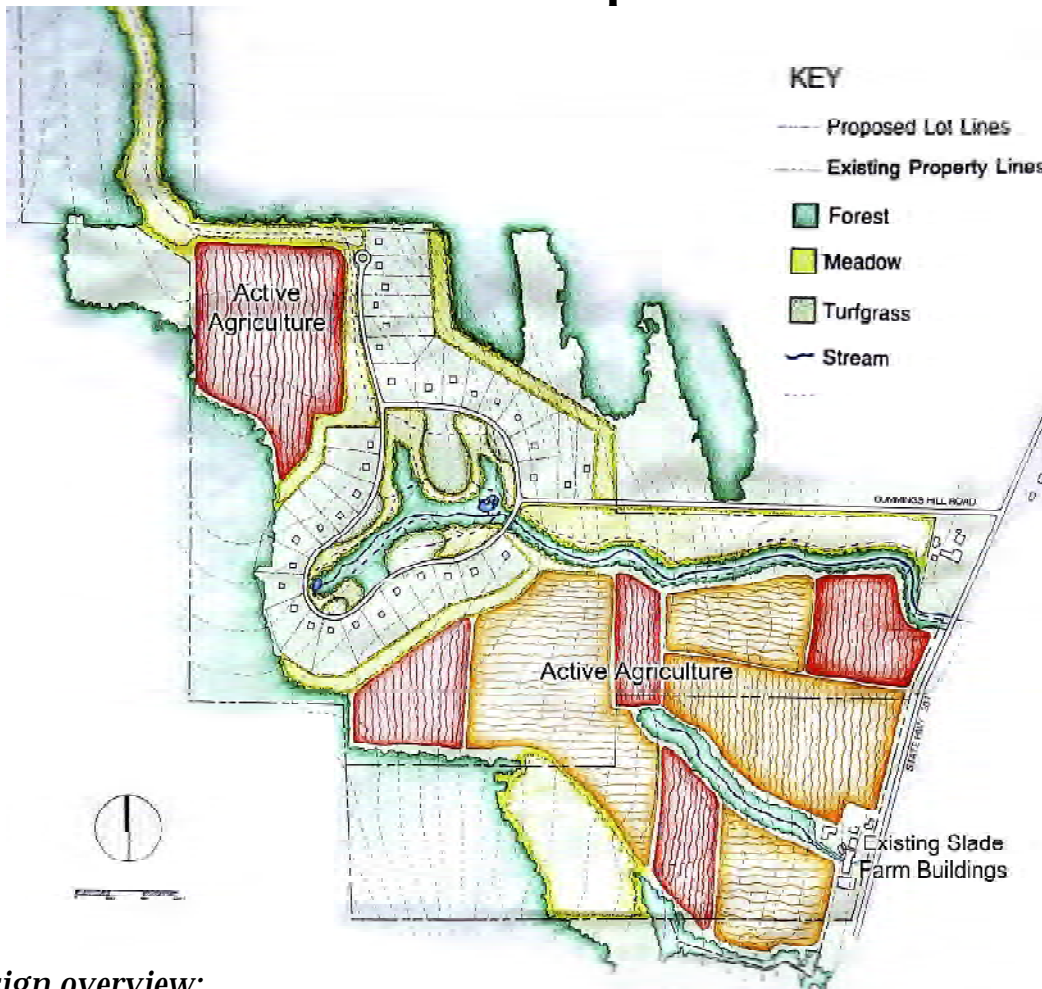
- NYS and Federal Farmland Protection Programs
- Purchase of Development Rights opportunities
- Wetlands Improvement Program
- Wildlife Habitat Incentives Program

Developed Area: 15 acres

Roads: ~1000ft..

% of Land Conserved: 97%  
(573 of 588 acres)

# Slade Site: Residential Development Plan



## *Design overview:*

By conserving large portions of the open space, and continuing active agriculture over significant areas of that, this development plan preserves the rural character as seen by passersby. Simultaneously, it provides highly marketable homes on 1- to 2-acre lots connected to common open space, along with the benefits of a homeowners' association. Offering terrific views from the hilltops over active farmland and conserved wilderness, the homes also connect to a community trail system that ties into the Tioughnioga River Trail. Focusing this development to appropriate areas also maintains the agriculturally prime land, and serves to buffer the slightly dense development from the surroundings. Finally, conservation and preservation measures on the undeveloped, unfarmed lands (the streamside buffers, the habitats, and so on) promote ecological health while maintaining or enhancing land value.

## *Highlighted Incentives:*

- Purchase of Development Rights provides for conservation of agricultural land.
- Significant setbacks from highway protect both homes' privacy and agricultural character
- NYS and Federal Farmland Protection Programs
- CRP: Streamside Buffers support for riparian buffer creation and protection

Developed Area: 63 acres

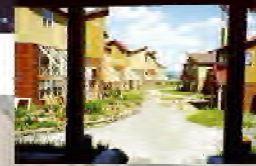
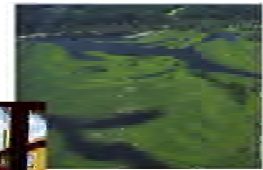
Roads: ~5000 ft..

% of Land Conserved: 90%  
(525 of 588 acres)

# Slade Site: Eco-Village & Community-Supported Agriculture

Woodlands  
Wetlands and  
Wheatfields...

Riparian Corridor  
EcoVillage and  
Farmers Market



## *Design overview:*

This design takes advantage of the site's connection to the proposed Tioughnioga River Trail system, and the large areas of farmable land, to merge a continued use of much of the site for agricultural purposes (and an associated farmer's market and community-supported agriculture program) with recreational and conservational purposes. In addition, the proximity of such uses to major transportation routes is explored through a proposal for a co-housing development, in which residents of private condominiums share common areas, responsibilities to the larger community, and a focus on more efficient, sustainable modes of living. The "eco-village" residents would take part in the operation of, and share in the profits from, the farm and the farmers' market.

## *Highlighted Incentives:*

- Forestry Incentive Program and CRP: Erodible Land funding may help establish the forest reserve sections of the project.
- The farmland and the eco-village would be eligible for NYS and Federal Farmland Protection Program support, as well as Agricultural Management Assistance funding.
- CRP: Streamside Buffer and Environmental Quality Incentives Program would cover the riparian buffers designed into the project.

Developed Area: 22 acres

Roads: ~3500 ft..

% of Land Conserved: 96%  
(562 of 588 acres)



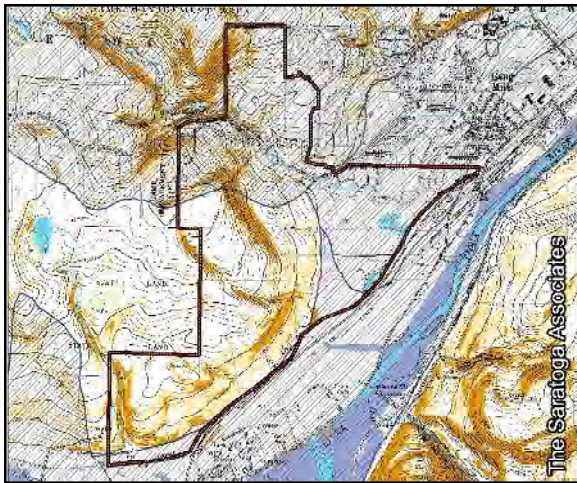
## 16: Good Design - Gang Mills/Jones Road

### *Site Introduction:*

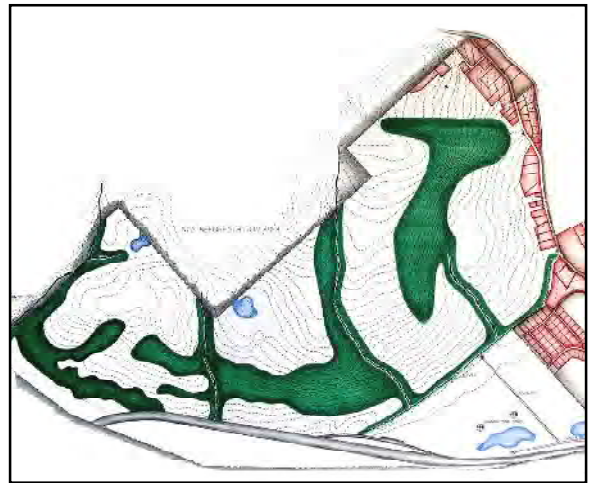
Through the 90's, the pattern of development in the Town of Erwin had been a relatively standard suburban model which built up in small sections, leaving stub suburban roads pointed toward open land beyond with no overall layout in mind. The resulting sense of unfinished community and the haphazard means of development were not truly meeting the Town's goals.

What the Town truly desires is a sense of place, a feeling of connection, and a completion of the Gang Mills community which enhances the whole. This vision is expressed in the Erwin Comprehensive Plan 2010 Update adopted in 2003 which designates the Jones Road area as an "emerging residential area." The students were asked to explore alternatives for managing, organizing, scaling, and directing new development patterns here, paying close attention to connecting the new and existing town fabric in an ecologically-sound way. Their work will be critically important during the development of the Town's proposed Green Infrastructure Plan, conservation subdivision regulations and the Jones Road Coordinated Build-Out Plan due for adoption in 2005.

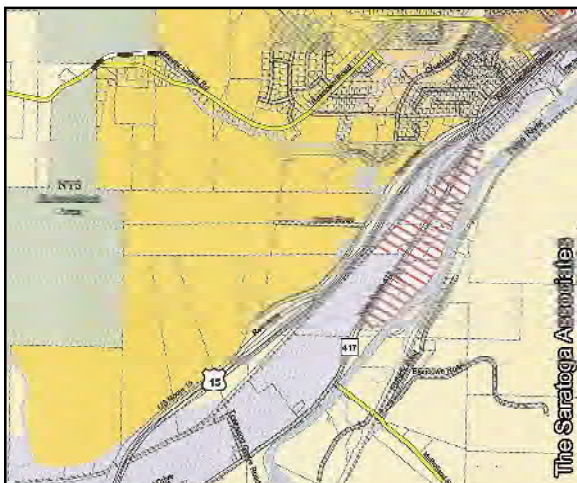
### *Site Analysis:*



Environmental Features



Forested Slopes And Ridges



12,500 SF Residential Zoning District



Site near Woods Edge development

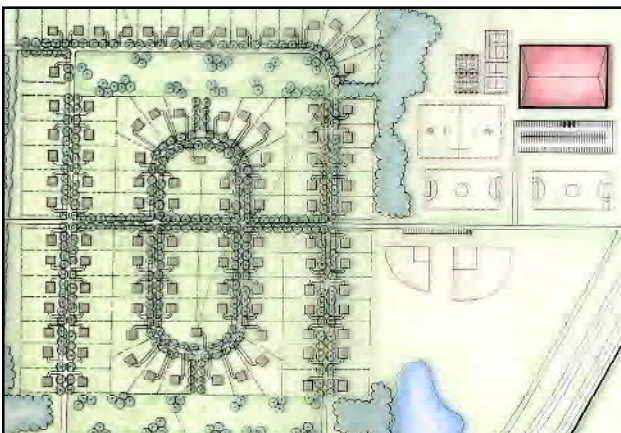


## Jones Rd. Site: Connections to Green Spaces



### *Design overview:*

In an effort to minimize changes to the land itself, this design proposed developments on only three of the buildable regions of the site. Each of these was designed with a central park space and corridors of greenspace connecting those to the surrounding development, putting all residents within walking distance of green space. The parks and corridors also connect to the outlying areas left in conservation. These then connect to a larger trail system that serves many forms of athletic activity, from hiking and biking to skiing and snowshoeing.



The trail system also connects to a 5-acre Environmental Education Center, sited next to the N.Y.S. Reforestation Area, which also features outdoor learning areas and a ropes course. In addition, along Route 15 nearest to Gang Mills, the project attempts to create a magnet for both new and existing residents through the creation of a new 20-acre sports complex, including an indoor synthetic field, multiple outdoor spaces, and a number of support facilities. These two features combine with the parkland to make the development attractive to new residents.

Number of Lots: 474

Lot Sizes: 12,500 sf

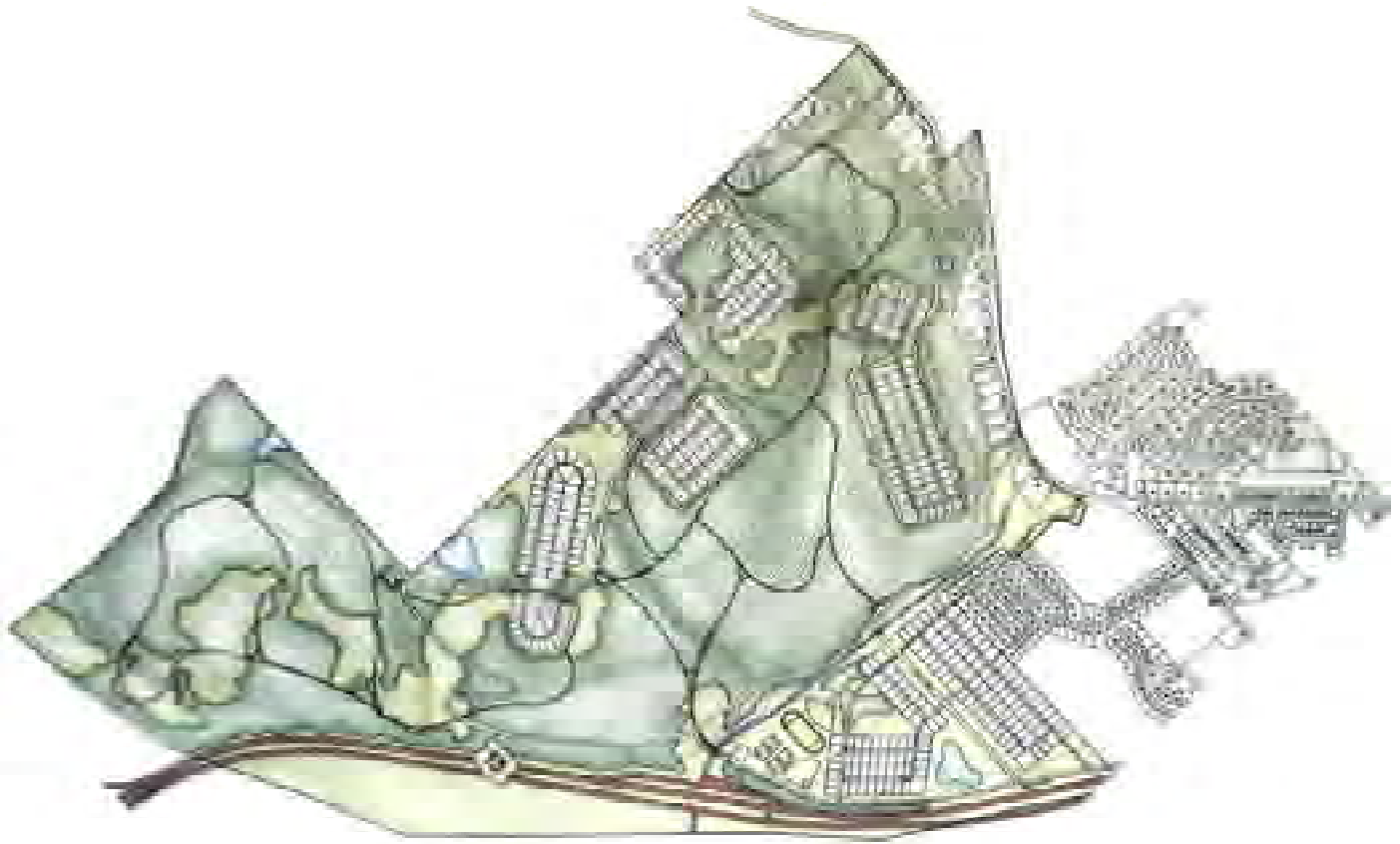
% of Land Conserved: 79%

New Road Length: 29,370 ft.

Road per lot: 62 ft. per lot

(790 acres out of 1000)

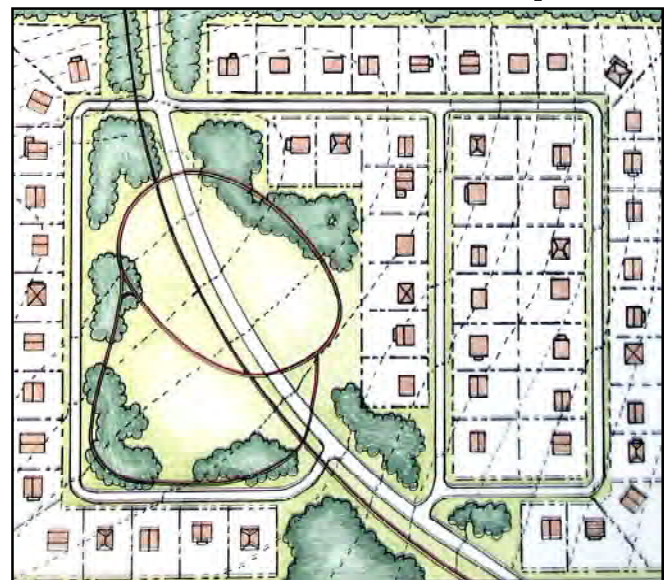
## Jones Rd. Site: Sheltered Development off Rural Roads



### *Design overview:*

This design focuses on preserving natural buffers to screen views of development, both within the site and from outside, to create a bucolic road experience that preserves much of the area's rural character. Through emphasizing concentrated communities as an alternative to sprawled out developments, the students have managed to maintain a large portion of the site's open space for trail systems, buffer areas, and pleasant entry drives. By creating individual side streets for the homes themselves and pulling these back slightly from the main connector roads, buffers are maintained on each side of the individual neighborhoods.

With each house in a small community, tucked onto a quiet street and sheltered from both undesirable views and heavy traffic, the sense of community is intimate and small-scale. Meanwhile, the tighter clusters allow for greater shared amenities.



Number of Lots: 423

Lot Sizes: 12,500 sf

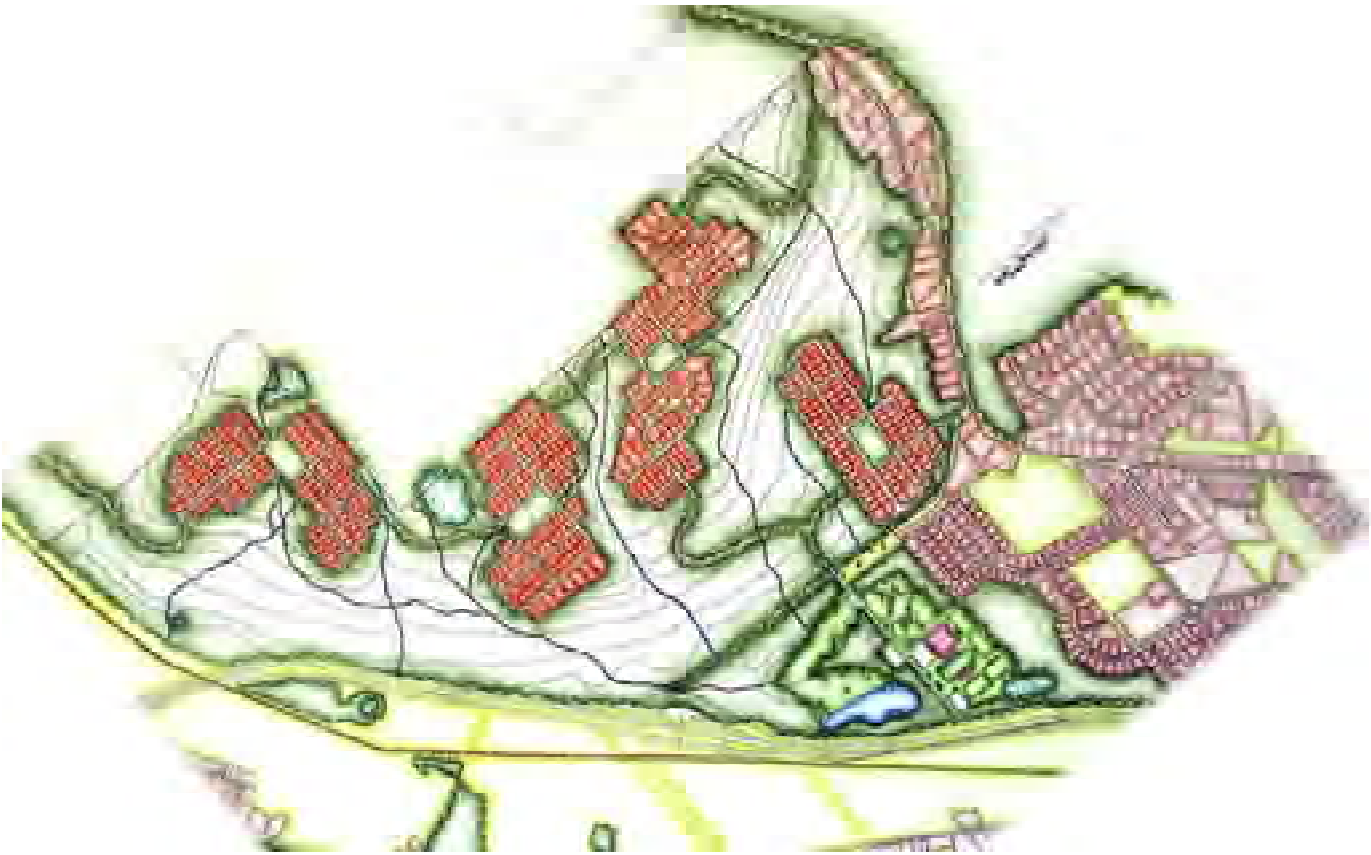
% of Land Conserved: 82%

New Road Length: 68,400 ft.

Road per lot: 162 ft. per lot

(816 acres out of 1000)

## Jones Rd. Site: Traditional Grids and Clustered Neighborhoods



### *Design overview:*

The proposed developments here have been held back from Route 15 entirely in order to maintain as much of the rural character of the site as possible, instead forming a system of small developments atop the hills. This approach also allowed the more difficult slopes, highest in biodiversity, and the areas near ravines and wetlands to be kept in conservation. The developments themselves were laid out in a relatively traditional grid format with neighborhood parks, helping to create a sense of community and tradition among the new residents. The regular structure of the developments also creates better sight lines and safety along the roadways for the residents. The neighborhood parks are designed to contain informal activity centers and playground spaces, and serve as gateways to the surrounding woodlands.



Along the lower area of Route 15, where heavy residential development would both be adversely affected by the heavy traffic and also detract from the rural impression, the project proposes instead an athletic area within a 32-acre public park. These amenities would then act as a linkage between the new developments and the adjacent residences in Gang Mills.

Number of Lots: 571

Lot Sizes: 12,500 sf

% of Land Conserved: 75%

New Road Length: 78,100 ft.

Road per lot: 137 ft. per lot

(748 acres out of 1000)



## Jones Rd. Site: A Necklace of Linked Communities



### *Design overview:*

This solution incorporates a sequential progression of developments to provide a gradual and logical transition in character from the existing town. The first step was the expansion of the Woods Edge planned development into the site. From there and from the less-dense areas of the adjacent town, three entrances lead into a necklace of linked communities built primarily of lots matching the existing development to create compact neighborhoods and preserve green buffers in between. Development moves west to a pair of less-dense communities organized around a central wetland, and finishes with the creation of neighborhoods with a looser, more naturalized design and lots of even larger sizes (~30,000 s.f.) connected by a web of green space.

The proposed 60-acre public park and trail system connect the various communities together into one community with diverse living opportunities. In addition, the design maintains a large, continuous band of greenspace in the areas where it best serves to protect the rural character and quality of the site and the views in from the surrounding areas.



Number of Lots: 573

Lot Sizes: 14,800 to 30,000 sf.

% of Land Conserved: 57%

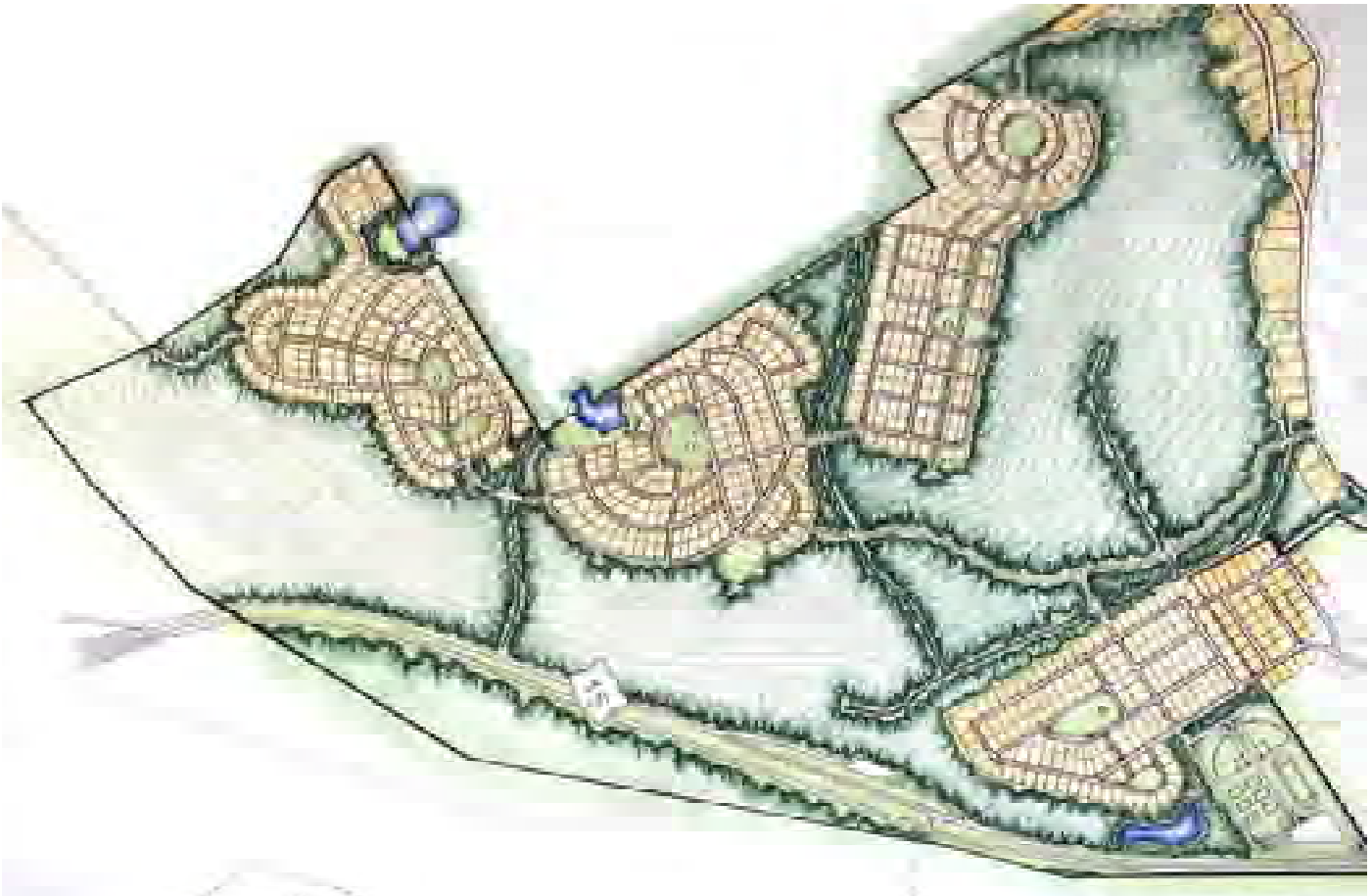
New Road Length: 67,670 ft.

Road per lot: 118 ft. per lot

(566 acres out of 1000)



## Jones Rd. Site: Communities with Centers



### *Design overview:*

This design draws on the principles of New Urbanism movement to create large “cantons” with distinctive 3-5 acre community centres and separate 5-8 acre parks. This produces a series of 4 communities which each maintain their own small-town walkability and feel, having viable public centers for services, gathering, amenities, limited retail, and civic life. With 12-25 acres of greenspace per canton, a 1:5 ratio of green space to housing, and only 40% of the site in development, the proposal also creates a very green and airy expansion to the town.



The community centers serve to promote community unity and provide services, and the greenways integrate the existing greenspace with the new development. The upper portions of the development, which were designed to work with the contours and shape of the landscape, are strongly focused on these features and have a very naturalistic feel. However, even the lower portions, which blend seamlessly into the existing developments along the edges of the site, carry these themes of neighborhood centers and greenspace connections. In addition, the expansion and the existing town both connect to a 20-acre community park.

Number of Lots: 616

Lot Sizes: 14,800 sf

% of Land Conserved: 60%

New Road Length: 70,620 ft.

Road per lot: 115 ft. per lot

(596 acres out of 1000)

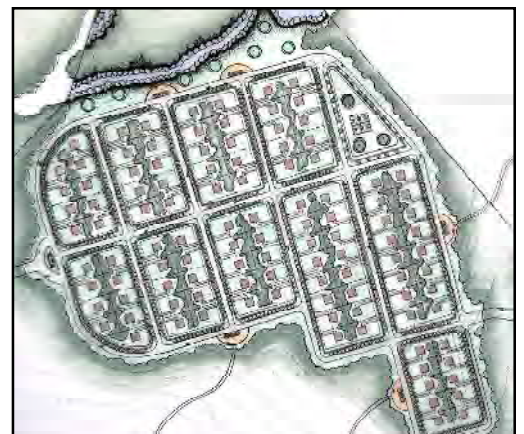
## Jones Rd. Site: Wide Tree-Lined Boulevards



### *Design overview:*

By reforesting both sides of the corridor along Route 15, this proposal seeks to restore and preserve the rural character by transforming 15 into a drive through the woods, thus improving its own experience while buffering the site from its adverse visual and noise pollution. Two recreational developments are also proposed, one at each end of the site, consisting of a variety of formal and informal athletic and recreational areas and creating usable, attractive public spaces while preserving the character of the forested hillsides through soft, inviting views.

The residential developments offset the regularity and compactness of their grid layout by creating boulevard-like streets throughout, with 20' wide tree lawns to each side of the street, a sidewalk on each side, and another 10' tree lawn outside that. These treelined, parklike corridors will reduce the feeling of density and crowding, and create long, framed, picturesque views along the streets themselves. The result is a series of developments that draw on the boulevard systems of historic neighborhoods by Olmsted and others which form part of the American visual language of genteel, peaceful, and dignified development and blend the urban with the rural.



Number of Lots: 463

Lot Sizes: 13,000 sf.

% of Land Conserved: 68%

New Road Length: 66,800 ft.

Road per lot: 144 ft. per lot

(682 acres out of 1000)

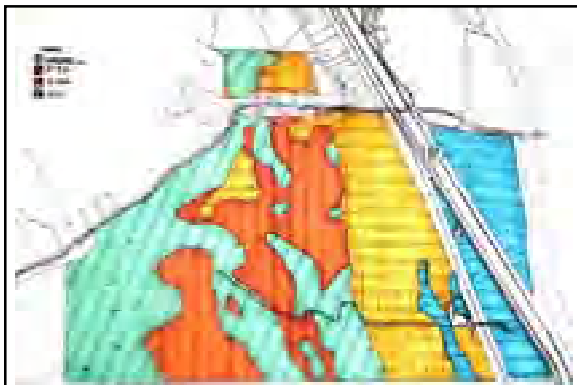
## 17: Good Design - Tombs Site

### *Site Introduction:*

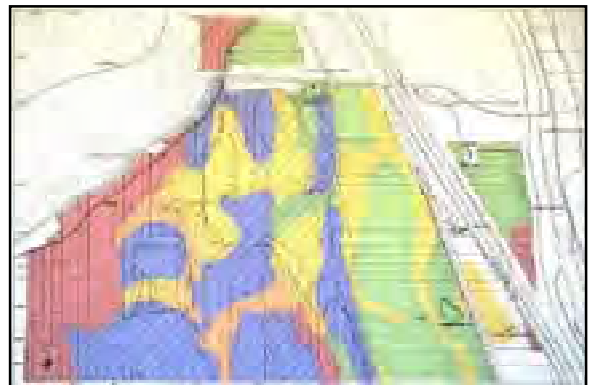
The Tombs/Sullivan/Horton site is located within the Town of Campbell and is a combination of three properties totaling 356 acres: the Jim and Pauline Tombs farm (about 213 ac.); the John and Mary Fran Sullivan farm (about 100 ac.); and the Horton family farm (43 ac.). Jim and Pauline live in a magnificent historic neo-classical home on the property which stands out as a highly visible landmark. The Southern Tier Expressway, a limited-use highway, passes the east side of the property, and its presence is a dominant feature of the eastern portion of the properties.

Set in a relatively flat area with few significant natural features other than farmland, and heavily impacted by neighboring gravel mines and the high-volume highway, the properties are a strong case study in working to preserve and enhance the rural setting in the face of adversity. With high visibility of much of the property from the expressway, an active railway line bisecting the property, road noise, and other constraints in the forefront of their minds, the students were faced with a tough design problem that also presented significant opportunities for public education. Jim Tombs and John Sullivan, both prominent landowners in the region, are strong supporters of the Rural Design Workbook project and can help spread the word.

### *Site Analysis:*



Site Topography



Overall Site Analysis



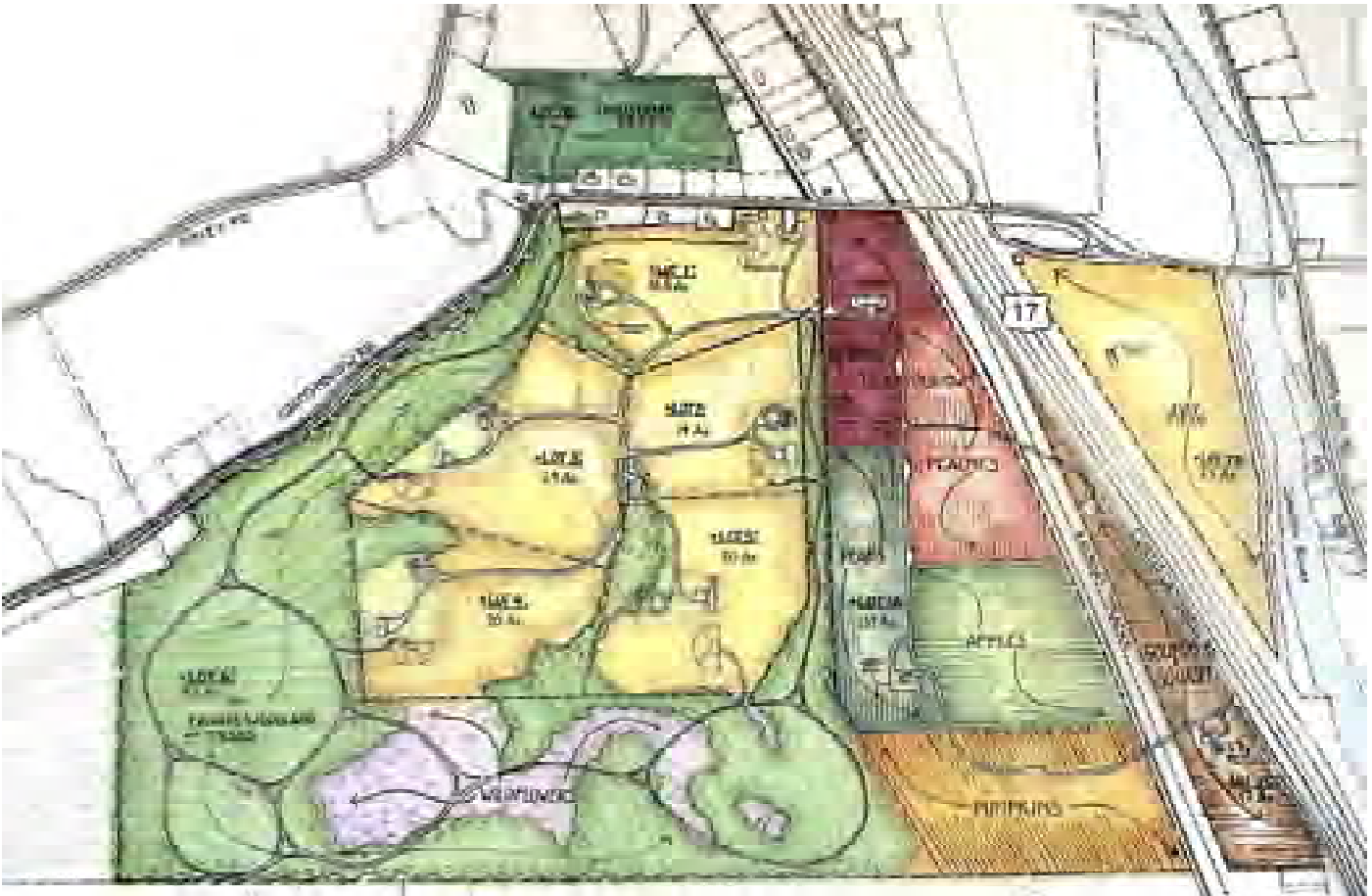
Significant Features



Tombs Residence



## Tombs/Sullivan/Horton Site: Pick-Your-Own Farm



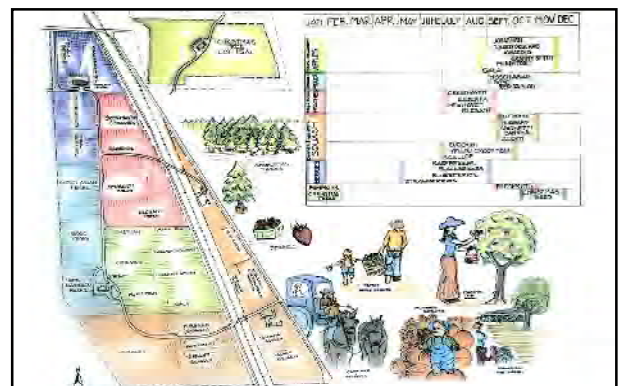
### *Design overview:*

The dominant impression of this site from the highway will be created by the pick-your-own farm, which takes advantage of the good soils on the floodplain to grow berries, fruit trees, pumpkins and squash, and Christmas trees. Using the Tombs house as a bed-and-breakfast, the rural image and agricultural character will be preserved.

To generate needed income, the poorer land making up a large portion of the site is slated for 5 rural estates with private homes, barns, paddocks, and pastures, suitable for raising horses and other rural uses. These lots, and the pick-your-own farm, will connect to a larger trail system which winds through more than 90 acres of forest and wetlands. Respecting the independence of rural landowners, a formal agreement with the Lot #6 owner will permit the neighbors to ride horseback, hike, and cross-country ski on the trail system included on his/her land.

### *Acreage Summary:*

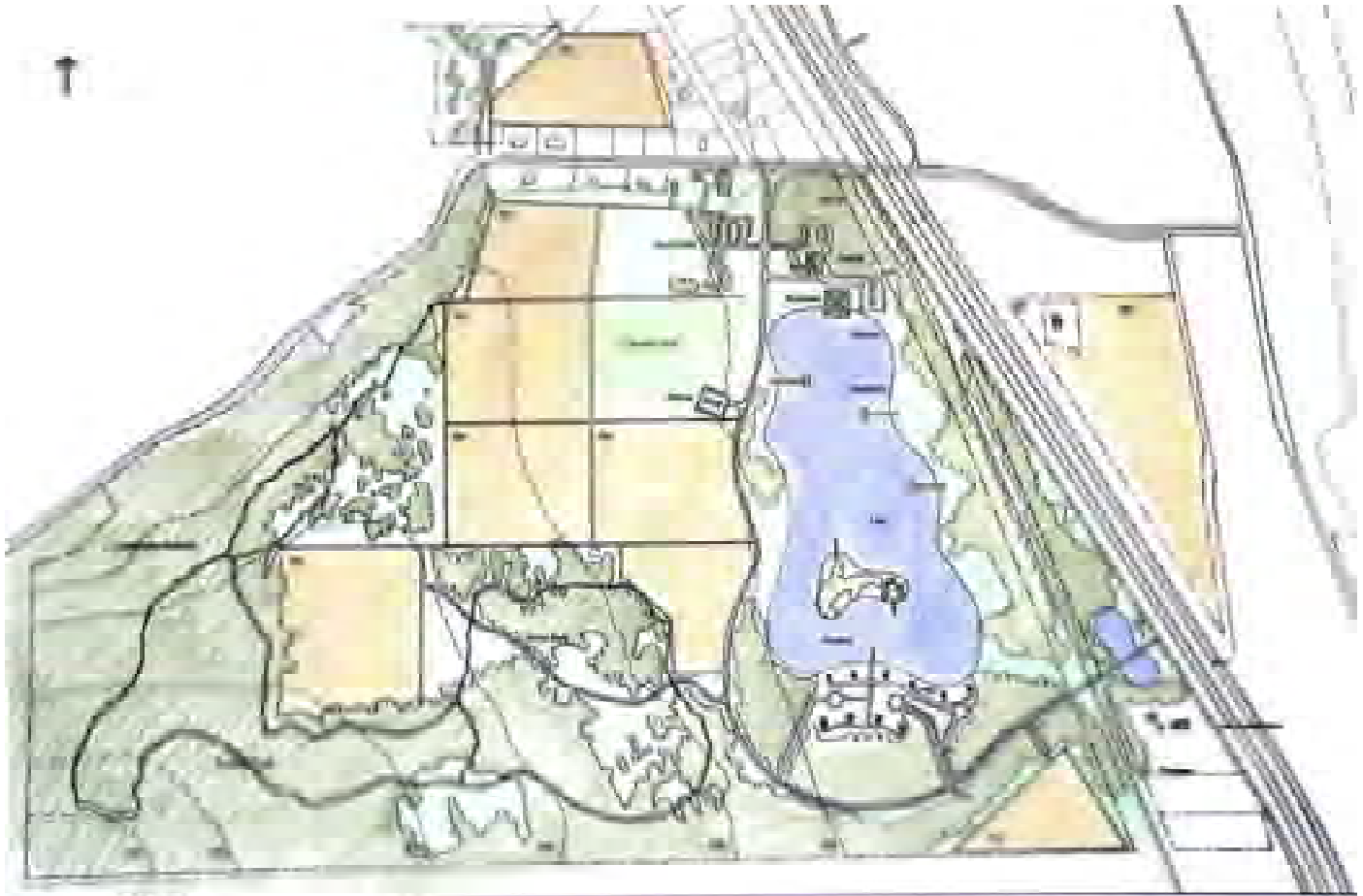
- Lots 1-5: Horse farm residences (94 ac)
- Lot 6: Private Woodland & Trail System (93 Ac)
- Lot 7: Pick-your-own farm and B&B; Streamside buffer (169 Ac)
- Length of new road - 610 feet which connects to long private drives



Map and Schedule for Pick-Your-Own farm.



# Tombs/Sullivan/Horton Site: Fishing and Recreation Facility



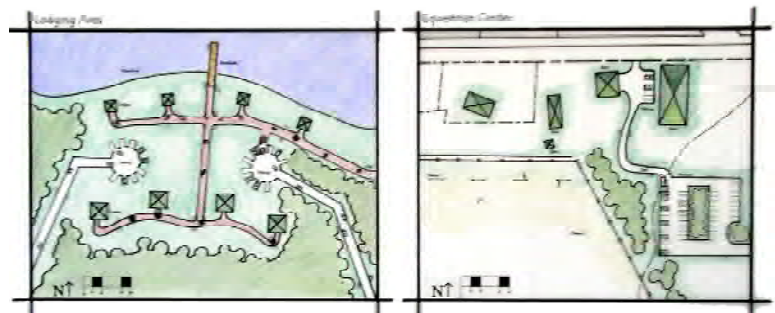
## *Design overview:*

After profiting from the extraction of gravel from the site, this proposal creates a large lake which becomes the focal point for a sport fishing and outdoor recreational facility. With numerous docks, a restaurant featuring al fresco dining with outstanding views, lodges, horse barns, and a bait-and-tackle shop on the premises, the site is poised to offer a great variety of activities through the four seasons. Sport fishing of many varieties, boating, canoeing, and horseback riding or hiking combine with pumpkin picking, snowshoeing, ice fishing, and horse-drawn sleigh rides to produce year-round activity for both local residents and tourists.

Meanwhile, the site aims to be a good neighbor by keeping a large portion of the prime agricultural land and main view areas as active farmland. The proposal also suggests exploring the use of alternative energy sources, particularly solar, to help power the development's facilities.

## *Acreage Summary:*

- Active Agriculture: 120 Ac.
- Conservation Easement: 162 Ac.
- Equine Facility: 10 Ac.
- Lake: 43 Ac.
- Lodging: 11 Ac.
- Residence: 5 Ac.
- Restaurant: 5 Ac.



Detail Plans of Cabins and Equestrian Center

# Tombs/Sullivan/Horton Site: Alternative Farming



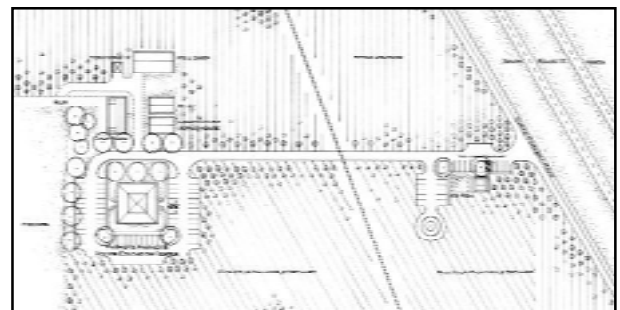
## *Design overview:*

As the site is particularly visible, and strongly impacts the character of the surrounding community, this proposal suggests maintaining the agricultural nature of the site while switching to a trio of niche markets to maintain economic viability and create strong synergies between the farming methods. Dairy goats kept on the site provide the possibility of connecting an artisan cheese business to the Finger Lakes tradition of wineries. The alfalfa grown to support the goats would also serve to fix nitrogen for apple trees, which provide numerous and marketable products - apples, cider, juice, and apple butter as well as baked goods. Meanwhile, honey bees kept on site would not only produce two types of honey - alfalfa and apple - but would also pollinate both the crops.

The site would also feature a year-round farmers' market facility and a connected visitor education center. The center focuses on alternative farming, particularly that featured on the site, and on the importance of supporting small-scale agriculture to preserve rural areas and the American tradition of agriculture.

## *Acreage Summary:*

- Dairy goat farm/pasture/feed production: 81 Ac.
- Farmer's Market: 3 Ac.
- Residences/apple orchard: 86 Ac.
- Equine Center: 28 Ac.
- Conservation with horse/walking trails: 158 Ac.



Closeup of the building cluster (market, center, and farm)

# Tombs/Sullivan/Horton Site: Campbell Creek Ranch & Resort



## *Design overview:*

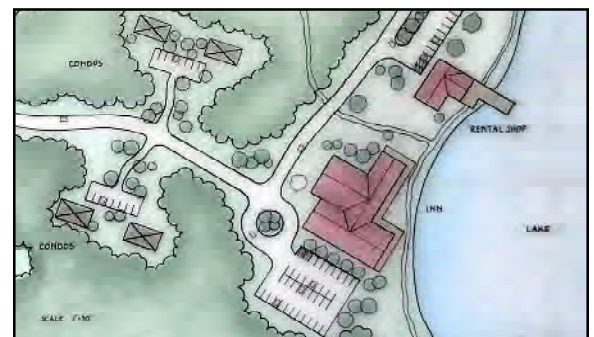
The Town of Campbell is surrounded by many great tourist attractions, but aside from two campgrounds, it has no hotels or other tourist lodging facilities. Given the site's high visibility and accessibility from Route 17, one of the major corridors through the area, the property is a prime candidate for a development that can not only house tourists visiting the other destinations in the area, but also be a destination on its own, both for tourists and locals.

Creating a lake through profitable gravel mining to serve as a focal point, the proposal surrounds it with an inn, a rental shop, and a restaurant along with small docks and a hiking trail. The trail is just one piece of a much larger system of horse and foot trails, which offers many opportunities for recreation throughout the site. To maintain viability through the off-seasons, the restaurant and its associated function hall create year-round business, and numerous winter sports are also available.

Finally, a large portion of the site would be reforested and, after the forest is established, a small condominium complex would be built, designed to host family vacations and business retreats in close proximity to the site's amenities and facilities.

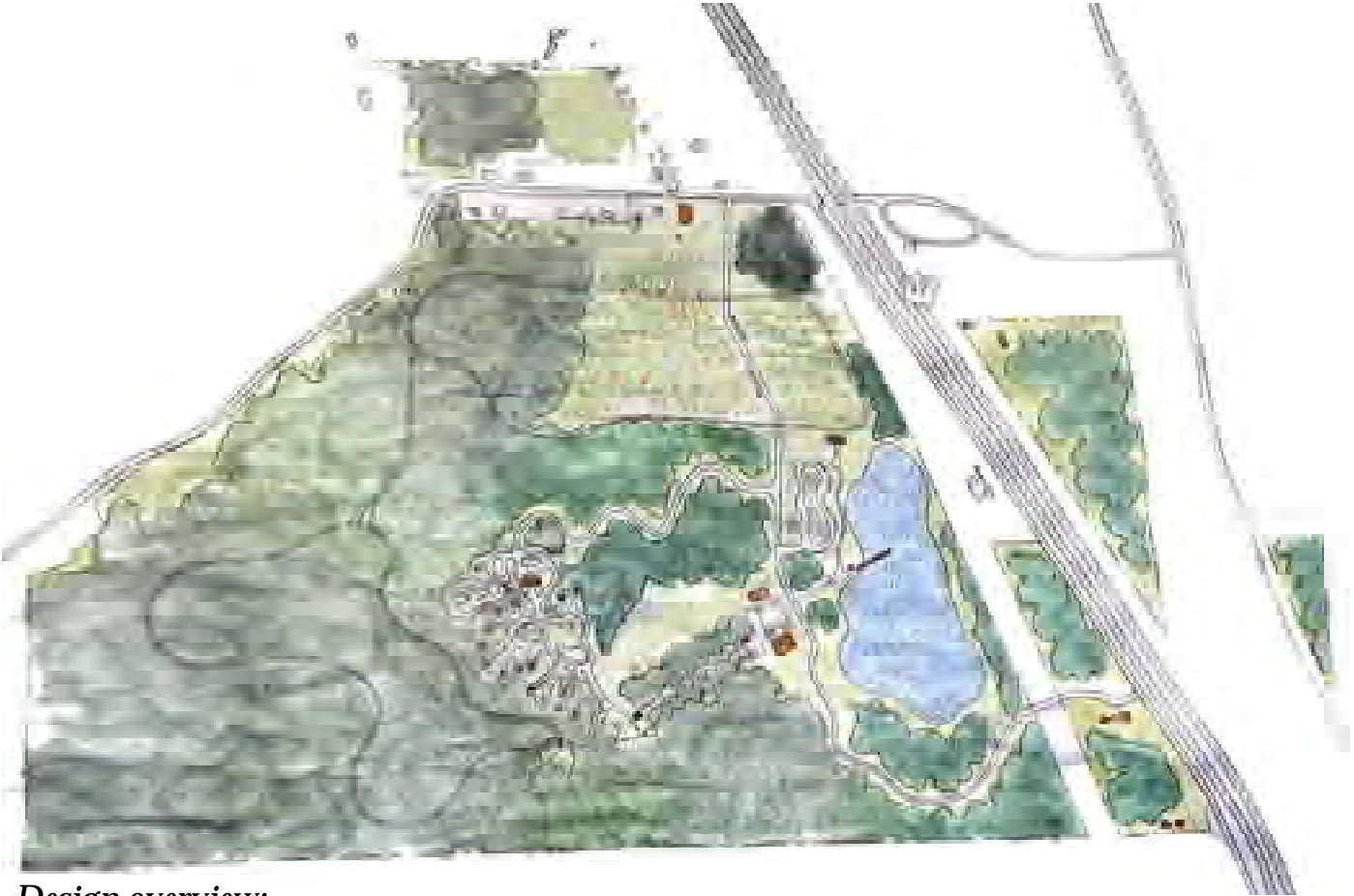
## *Acresage Summary:*

- Lake: 15 Ac.
- Lodging: 27 Ac.
- Inn/Restaurant: 6 Ac.
- Stables: 2 Ac.
- Fields/forests for riding/hiking: 306 Ac.



Inn, restaurant and rental facility on lake shore

# Tombs/Sullivan/Horton Site: Rural Retreat and Recreation



## *Design overview:*

With a goal of providing a local attraction as well as a retreat destination, this proposal takes advantage of the natural hillside to separate the rustic cabins for the tourists, above, from the amusement attractions below. The retreat centers around log cabins in forested lots, varying the sense of privacy and isolation. The cabins would also have easy access to a common field for activities and the dining and function hall for the retreat center, as well as to a chairlift. The lift can be used for transportation both up and down the hill, as well as serving the tops of two main attractions - a large alpine slide complex which winds down through the lightly forested hillside, and a sledding and tubing hill for the winter months.

At the bottom of the hill, recreational features include horseback nature tours, wagon and sleigh rides, bike and hiking trails, a large pond with rowboats and canoes, ice skating, a pumpkin patch, and a ropes challenge course. The site also features a rental facility, a country goods and souvenir store, and a dining and retail building. In addition, the existing Greek-revival style farmhouse would serve as a visitor check-in and information center, helping to maintain the rural character of the site and provide a strong first impression of place.

## *Acreage Summary:*

- Lake: 20 Ac.
- Cabins: 15 Ac.
- Retreat center/dining/retail: 2 Ac.
- Visitor Welcome Center: 5 Ac.
- Active agriculture: 25 Ac.
- Fields/forests for trail system: 289 Ac.



Base Lodge, Chairlift, and Rental Center



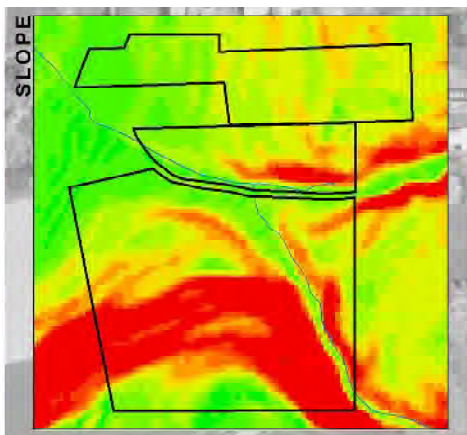
## 18: Good Design - Fay Site

### *Site Introduction:*

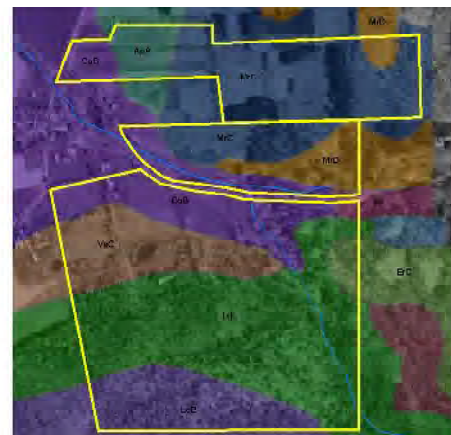
John Fay's 157-acre property abuts the seasonal-use States Road, and backs onto the Connecticut Hill Wildlife Management Area. The road was named for the family that owned the land in the 1950's. Most of the property has been logged several times; most recently, his remaining woodland was logged out around 1990. In the past, Mr. Fay rented much of the property for hay and sold firewood. Currently, the site has a sizeable orchard of apple, cherry, pear, and plum trees, but he has found the orchard to be too labor-intensive to be viable, so now it primarily feeds wildlife. Since wild turkey have been transplanted from his property to other places, there is clearly a strong wildlife presence.

The nearby hamlet of Cayutaville serves primarily as a bedroom community for Watkins Glen, Elmira and Ithaca. Spiralling school taxes and the increased reliance on the property tax to support local and county government have raised the tax burden ten-fold since the mid-1970's. Some of his prime farmland has lately been rented to the Gages, who own a thriving large farm down the road. The students were challenged to propose a variety of options for potential uses of Mr. Fay's property which would allow him to lower his tax burden and generate a trust fund for a scholarship while protecting the rural environment around him.

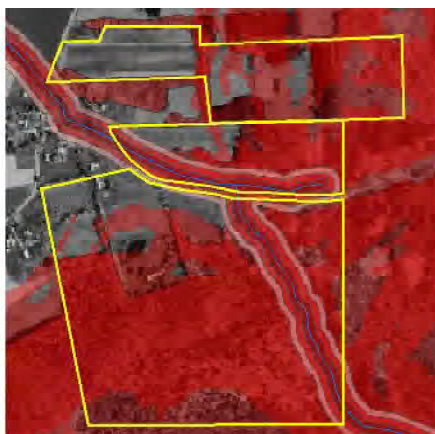
### *Site Analysis:*



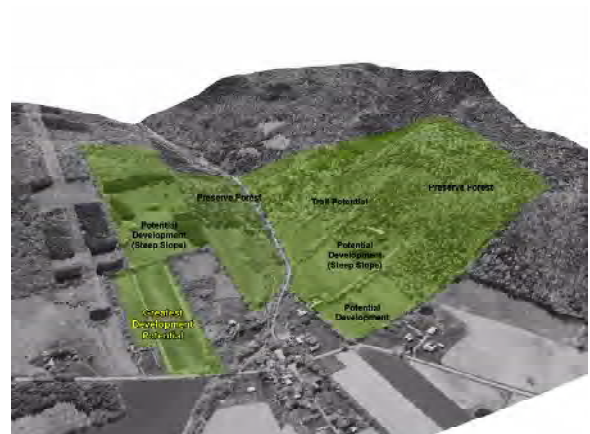
Site Topography



Soils Analysis

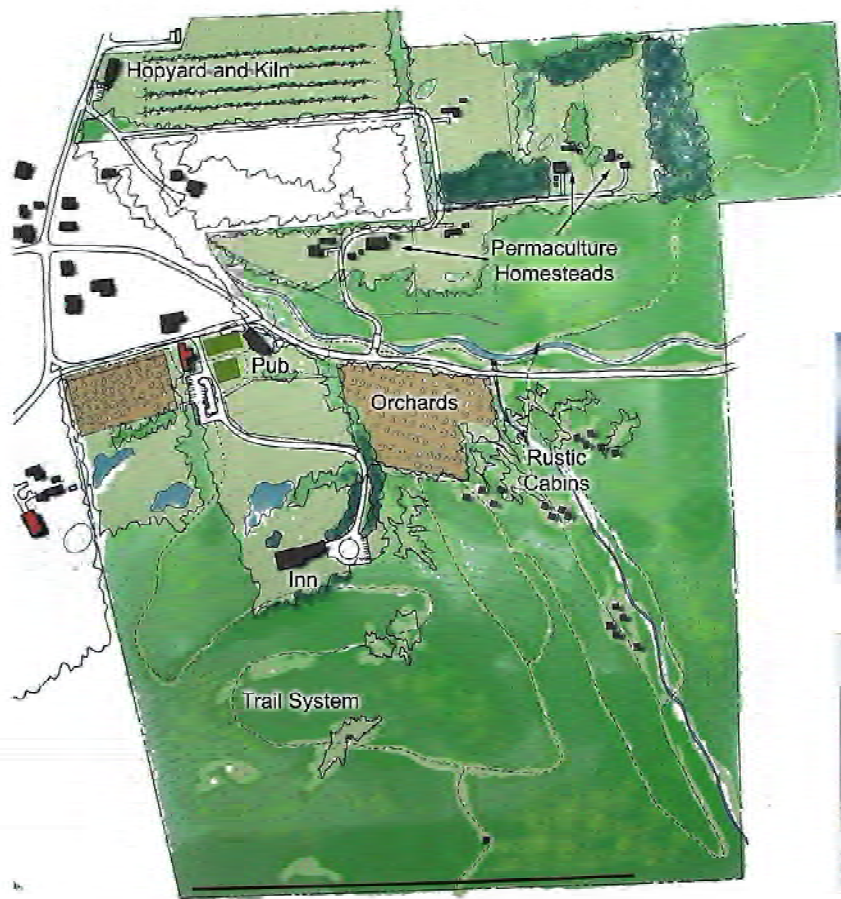


Overall Analysis



Development Potential

# Fay Site: Permaculture Inn and Homesteads



DESIGN PROPOSAL:



THE RUFFED GROUSE  
INN, PUB, HOP YARD  
& PERMACULTURE  
HOMESTEADS



## *Design overview:*

Capitalizing on the site's long history and upkeep of the farming areas and orchards, the design proposes the creation of an inn, general store, and pub to attract agro- and eco-tourists. A large hops yard is proposed which would tie in with the pub through connections to local commercial microbrewing, and also relate to the area's hops-growing history. The Ruffed Grouse Pub, located in the existing barn, recalls Aldo Leopold's study on Connecticut Hill, and the conserved land on the site will serve as habitat for the grouse, turkey, and other species. An inn is located in the existing home, and rustic cabins are located around the site.

The farm, inn, and pub also focus on permaculture - design for energy efficiency and lower fossil fuel reliance, conservation of space and resources, and smaller-scale intensive agricultural systems which are highly productive and ecologically sound. The ponds are designed to catch runoff, and the stream corridors are protected. Just down the street on Swamp Road, the Fingerlakes Permaculture Institute provides a resource and a model for this style of development, attractive to retirees or young people who might otherwise be lost to cities. The project includes 6 of these homestead sites combining residences with opportunities for small gardening or other agricultural ventures, wildlife habitat, and natural conservation in keeping with the permaculture theme.

## *Development Summary:*

- 77% of 157 acres conserved (36 ac. developed)
- 12% residential: 6 lots (19 ac.) and 11% commercial (17.5 ac.)
- 4500 ft. new road (3200 of it gravel) - 533 ft./lot.

## Fay Site: Eco-Burial Preserve



### *Design overview:*

This proposal chooses to take advantage of the natural character by returning to the historic means of burial for the area - simple headstones and pine box coffins in small, private cemeteries, churchyards, or private homestead land. This sort of burial also has environmental benefits - no embalming chemicals or cement coffins are involved, headstones are made of low profile native stones, and the plots are situated among the natural features of the land. The eco-burial model calls for a mix of traditional grave markers and memorial trees. As the plots are sold and used, the land would gradually be transformed into a nature preserve and protect rural character, wildlife habitat, and open space.

In addition to the staged development of the ecoburial program, the design calls for a retirement property for Mr. Fay with an easement of open space to the Finger Lakes Land Trust, and the protection of the current active farm, which would be sold to a farmer interested in keeping it agriculturally active. With streambed restoration efforts, wetland and woodland plantings, and a formalized trail system, the site would become a community asset and a part of the broader open space network connecting to Connecticut Hill. These revitalization and remediation efforts are financed partly through the sale of the burial plots.

### *Development Summary:*

- Retirement Estate: 25 Ac.
- Farmette: 15 Ac.
- Eco-Burial Property with Conservation Easements: 117 Ac.



## Fay Site: Alternative High School



### *Design overview:*

With the intention of maintaining the majority of the site's natural character while providing some form of access and increased use for it, this project uses the ample wilderness area as recreational and exploratory space for an alternative high school focusing on at-risk youth with low self-esteem, based on the "emotional growth education" model of the existing CEDU Schools program. These schools focus on character and confidence building activities for children and teenagers with learning disabilities, emotional difficulties, or behavioral problems, making the large wooded lot and open fields a prime candidate for an extensive trail system, ropes courses, teamwork activities, and other resources. See <http://www.cedu.com> for more information.

In addition, the school's proposed gym, athletic fields, outdoor basketball courts, cafeteria, and function spaces would be available for use by the surrounding Cayutaville community. The creation of such a facility would allow for further hamlet-wide activities, strengthening the bonds with the larger community. Lastly, the preservation of such large swaths of the land for dedicated, active uses helps protect the overall rural character of the area in the face of development pressures.

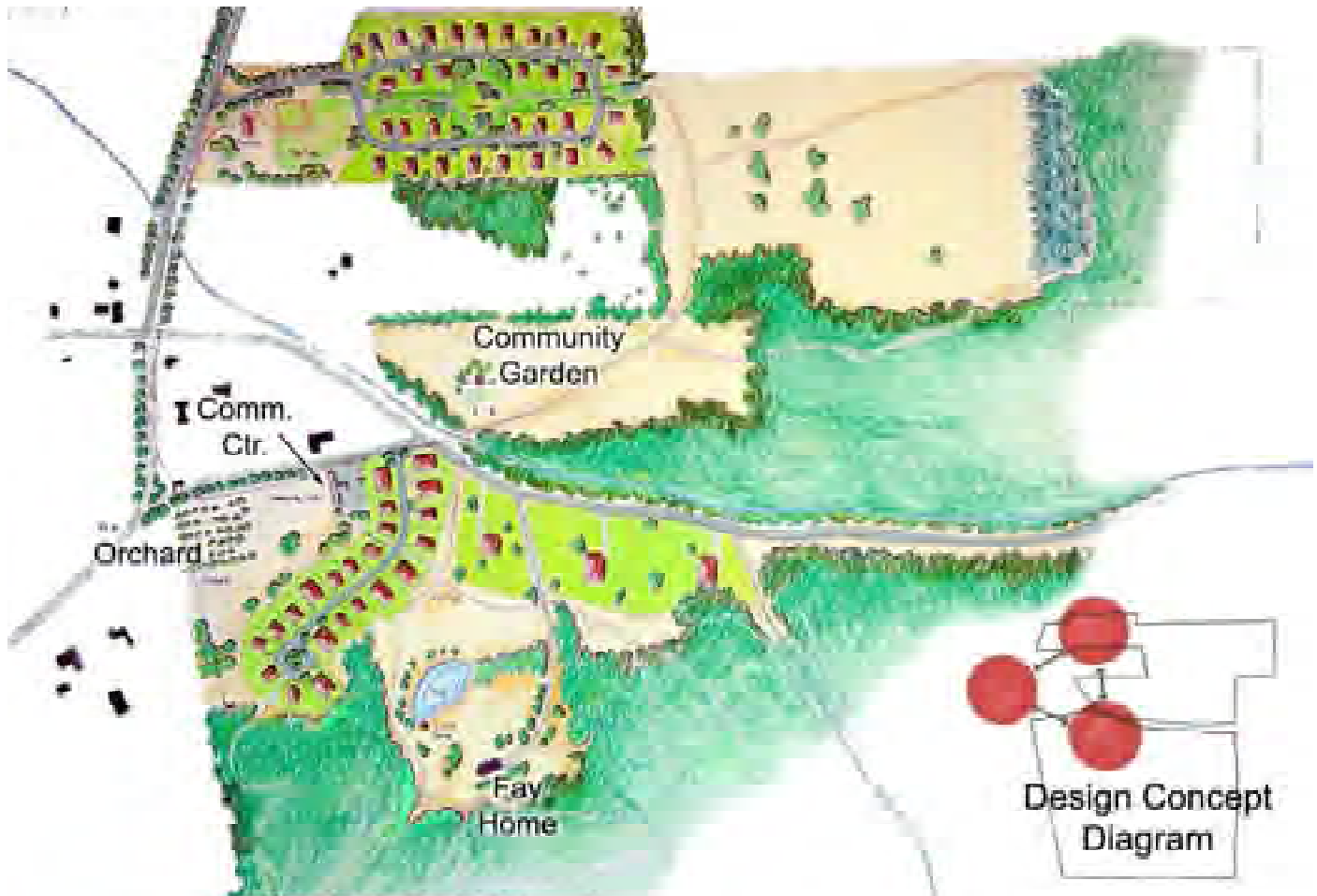
### *Development Summary:*

- 90% of 157 acres preserved, with only 15 acres of disturbance;
- 1411 ft. of new road;
- 10 proposed buildings.





## Fay Site: Clustered Community Housing



### *Design overview:*

Two housing clusters with distinct characters form the primary piece of this design. Connected to one another and to the existing hamlet of Cayutaville by pedestrian paths, the developments are located to tie into the hamlet's core and provide public and community utilities including playing fields, a community center, and other facilities. The two clusters respond to the housing needs of Cayutaville in distinct ways. The northern "Green" module contains 33 primarily low- to moderate-income housing arranged around a shared central green space. The "Orchard" cluster provides 22 more mixed-income buildings in a combination of single and multi-family units. Its design carefully conserves and interacts with the existing apple orchards.

Also on the site are three more standard 5-acre housing lots, intended to provide quick return on investment and provide a buffer from the higher density development. The project also allows Mr. Fay to retain his current home for his retirement. Lastly, the existing Fay barn has been turned into a local community center, providing a magnet for activity not just for the newly created clusters, but for the whole hamlet and the surrounding area.

### *Development Summary:*

- 87% of 157 acres preserved, with only 20 acres of disturbance;
- 64 dwelling units;
- 2000 ft. of new road;
- 31 ft of road/unit.

# Fay Site: Living History Farm and Museum



## *Design overview:*

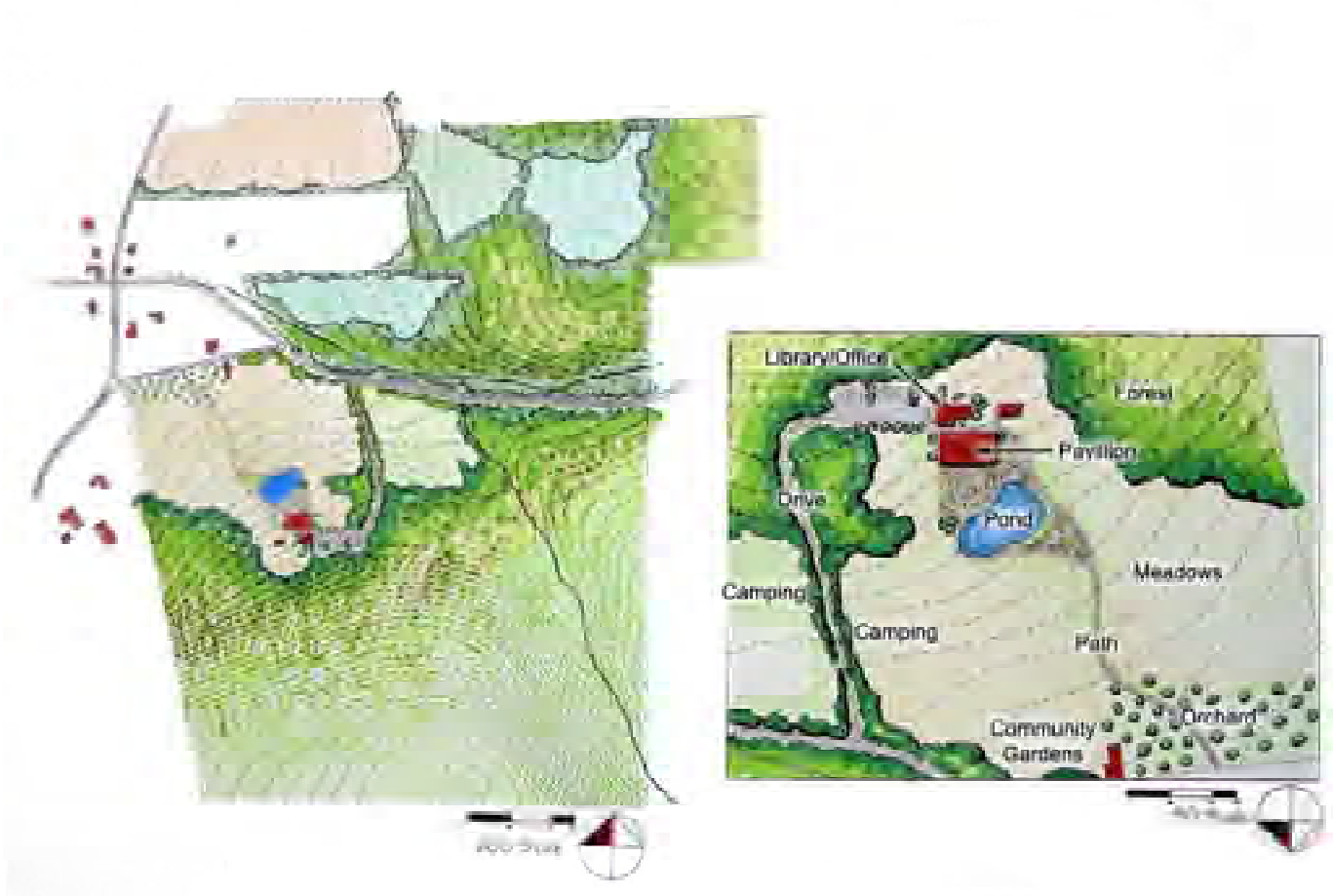
Promoting historic preservation as a tool to revitalize Cayutaville, honor the county's rich agricultural and historic heritage, and enrich the community's daily lives through education and interpretation outreach programs, this project proposes the creation of a "living history" farm and museum which would capture and project the character and atmosphere of rural life in 19th-century Schuyler County. Drawing not only on the existing Fay farm buildings, where applicable, but also on a number of other 19th century buildings and artifacts from the area, the museum does not attempt to reproduce a single, specific farm but instead to create a comprehensive overview tied to a single experience.

On site, active apple orchards, grain, corn, hay and vegetable crop fields surround a complex of buildings including the existing renovated barn, a stable and associated corral, a cider press, a farm-crafts workshop, a sheep pen, various outbuildings, and a visitors' center/active museum. Also included is an inn tied to the site experience and built nearest Cayutaville, tying the site into the larger community and providing a boost of tourism to help stimulate the local economy. The existing Fay house will be occupied by the caretaker. Finally, the 35 acres to the north of the museum complex will remain in active commercial agriculture.

## *Development Summary:*

- 89% of 157 ac. conserved (17 ac. of disturbance)
- Approx. 800 ft. of new road.
- 10 New Buildings and 8 Camp Cabins

## Fay Site: Church Retreat Camp



### *Design overview:*

With the intent of preserving the rural character and enhancing the hamlet of Cayutaville, this project proposes the development of a small, rural retreat center aimed particularly for use as a church camp. Tucked into the forest edge, the main complex consists of a library and an office, as well as a large outdoor pavilion for events. Also attached to the main complex are a playground, a garden with a meditative spiral theme, and a large pond. The goal of the retreat would be to provide a contemplative rural experience, and a place to get away from the busy world for reflection with the hope of promoting a nurturing community.

The orchard along the road is preserved, and adjoining space is set aside for community gardens open to use by the Cayutaville residents. Areas have been designated for tent, cabin, and cottage camping sites associated with the retreat. The prime agricultural land to the north of the site will be sold or rented for active agriculture. Finally, the remainder of the land will be put under conservation easements to serve as a natural amenity of forest and meadow land, providing wildlife habitat, scenic value, and the space for a trail system allowing meditative walks in the woods.

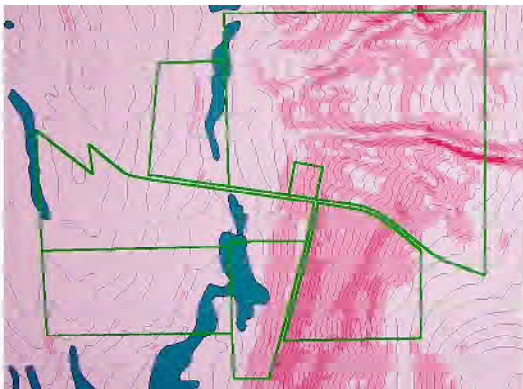
### *Development Summary:*

- 96% of 157 ac. preserved (7 ac. of disturbance)
- Upgrade approx. 600 ft. of driveway to new road.
- Three new buildings.

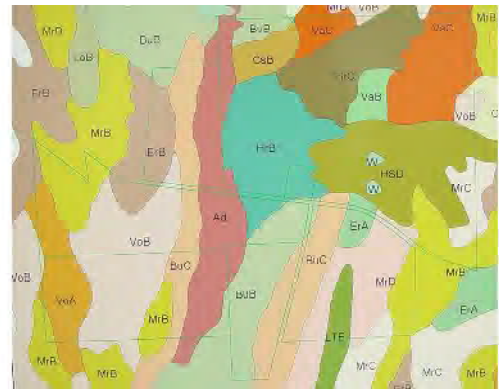


Mark and Diann Murphy's 360 acre property in the Town of Hector has seen a variety of farm enterprises over the years. With 70 acres currently rented to area farmers for crop or feed production, the land has also been a dairy farm. In addition, the site contains a small vineyard of long-established Concord and Niagara grapes, and is also home to a side venture in horse breeding and Black Angus cattle raising. Mark has improved his woodlands with state assistance and has created large decorative ponds with an eye toward eventual development overlooking his scenic, pastoral landscape.

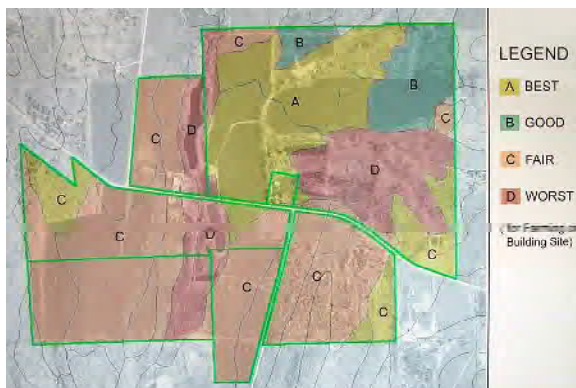
### Site Analysis:



## Site Topography



## Soils Analysis



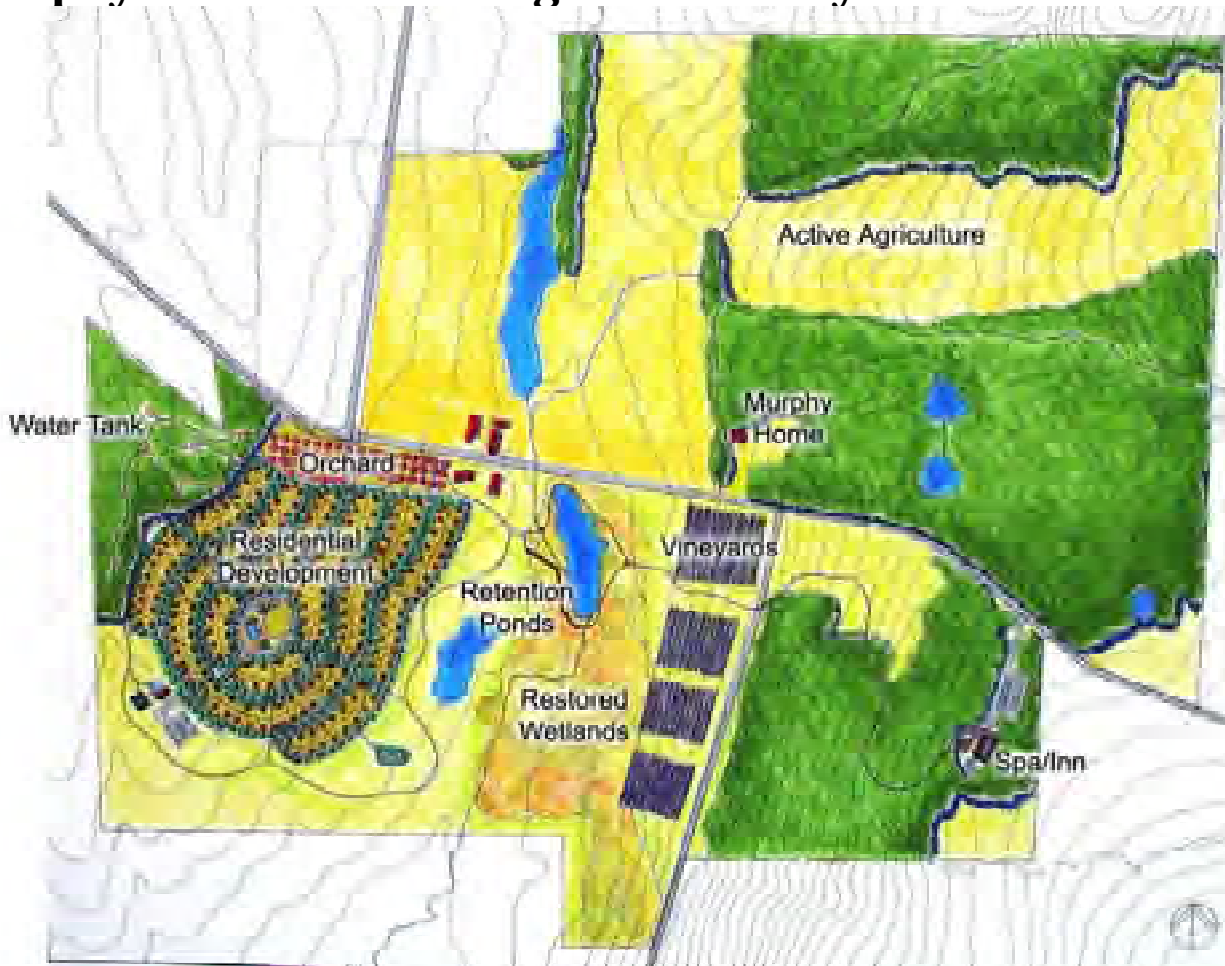
## Farming & Development Suitability



## Significant Features and Views



# Murphy Site: Retiree Village Community and Inn



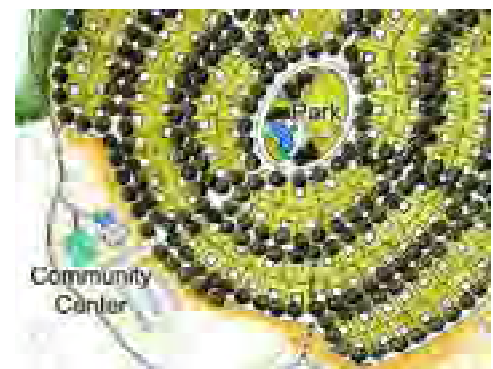
## *Design overview:*

The major feature of this proposal is a development of 248 homes for active retirees looking for a maintenance-free, diverse lifestyle. Centered around a common open space and park, the development features walkable distances and mid-block pedestrian connections. The result is a small village that shares a community center, pool, tennis courts, and parks, has access to trails, and provides full maintenance services. The trails connect out to surrounding conservation lands and a restored wetland. An orchard is created as the entrance to the new village, shielding the view from the road. The Murphys have a cozy retirement hideaway with a view of the vineyards.

The setting also has convenient proximity to Seneca Lake and the Wine Trail, the Finger Lakes National Forest, and NASCAR racing at Watkins Glen, making it attractive not only to residents but to tourists. The proposal therefore includes a small spa and inn targeted at the tourist market and set in a rural environment. That setting is protected through conservation easements, and the active farm north of the road remains in agriculture. However, the students performed a financial analysis which concluded that the project as designed was too intensive to be feasible.

## *Acreage Summary:*

- 248 Lots, 7,500 sf each
- Road Length: 17,190 ft.
- Road/Lot: 70 ft.
- Land Conserved: 83% (300 of 360 ac.)



## Murphy Site: Elder Hostel and Farm



### *Design overview:*

With a central lake as its major organizing feature, this design proposes a 64-unit residential community for active seniors built around outdoor courtyard areas and common spaces with pedestrian links and shared amenities. The development also features rear car access and parking, allowing the residents to have a truly walkable experience within their development. These homes connect to the central lake, with a trail system connecting a bandstand, a fishing pier, a pavillion, and the wider landscape including the restored wetlands and forests nearby.

A community center for the development is located next to the community gardens. It is also close to an “elder hostel” adult education and enrichment center which would attract retirees visiting the Finger Lakes and provide programs for resident seniors.

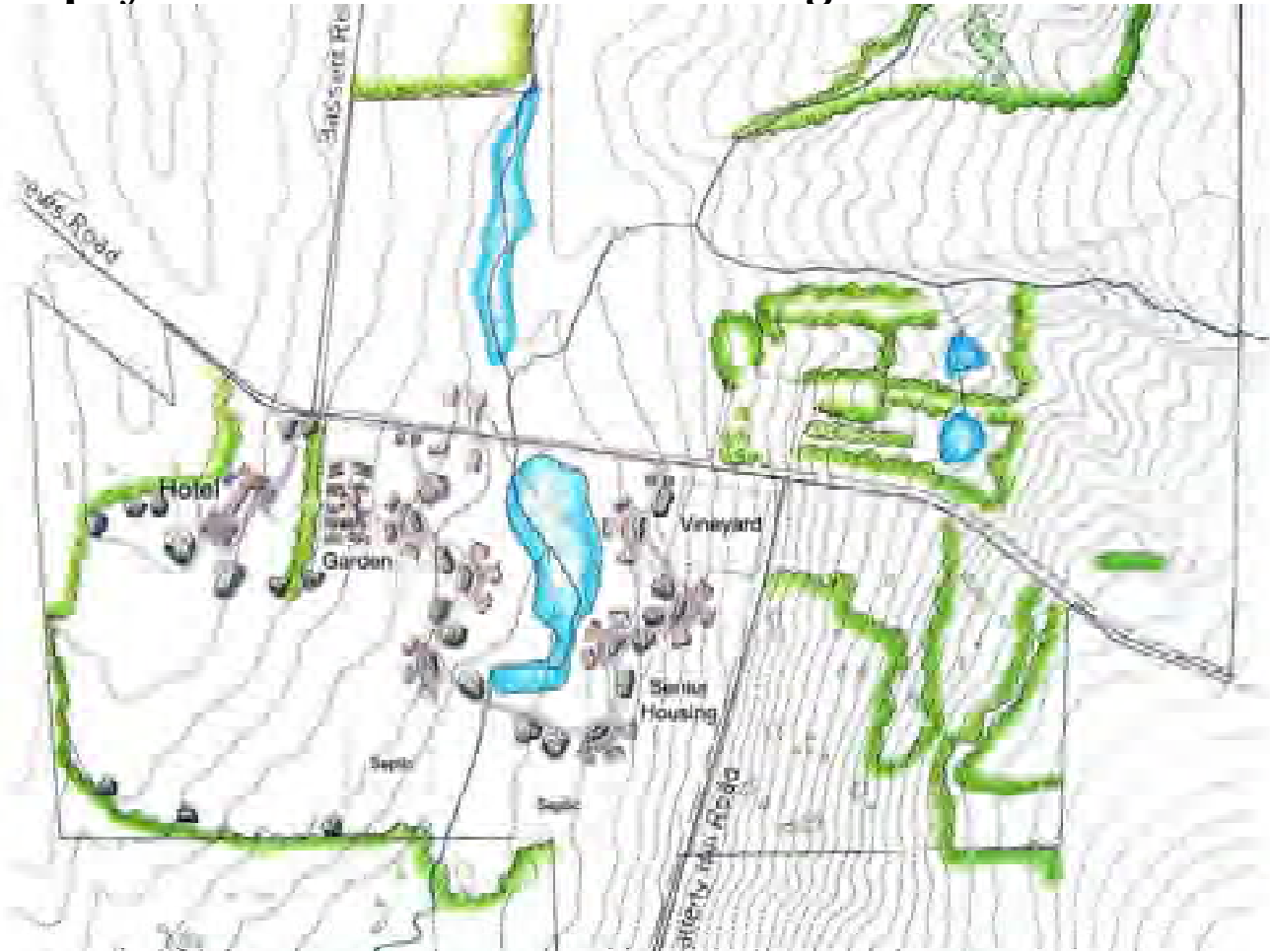
The Murphy residence is retained to allow the family to retire on the site. In addition, much of the remaining land is to remain in agricultural production, including an active vineyard. The remaining wooded land would be restored and put under conservation easement.

### *Acresage Summary:*

- 64 House Units
- Road Length: 3300 ft.
- Road/Unit: 51 ft.
- Land Conserved: 91% (328 of 360 Ac.)



## Murphy Site: Hotel and Senior Housing



### *Design overview:*

With a goal to maintaining the rural character of the site, this proposal creates a less-dense development of 21 duplex housing units targeted at seniors, for a probable total residency of about 65 people. By clustering these duplexes in small modules around a central lake and blending them in to the surrounding fields, much of the remaining active existing farmland can be maintained under easements and leased out. With the community on a looping, scenic private drive surrounded by active fields, the overall impression of the road will be one of low-density development nestled into a rural landscape.

Another major feature of the development is the creation of a hotel to serve the tourist market as well as family members visiting the older generation, giving a potential source of revenue for the area as a whole. Finally, the northern half of the site remains entirely in active agriculture, helping preserve the best-quality farmlands and protect them from future development.



### *Acreage Summary:*

- 42 House Units
- Road Length: 4800 ft.
- Road/Unit: 114 ft.
- Land Conserved: 86% (310 of 360 ac.)

## A: History of the Workbook

The funding for the Rural Design Workbook comes from Section 604(b) of the federal Clean Water Act. Its primary purpose is to protect water quality by encouraging good site design which builds in water quality protection measures.

The idea grew out of a presentation by Max Pfeffer of Cornell University's Center for the Environment to the Upper Susquehanna Coalition (USC) in 1999. Pfeffer was interested in working with the USC on a "watershed forum." He proposed a collaboration to solve watershed issues on a site specific basis which could then be shared with others. The idea grew through meetings between the Southern Tier Central Regional Planning and Development Board (STC) and Cornell's Department of Landscape Architecture (LA) during the spring of 2000, culminating in the decision that a Fall 2000 undergraduate design studio would take on generating the designs. A small contract with STC would cover the cost of site visits, travel to the public presentation, and materials. The resulting designs would be gathered and compiled into this workbook by D.J. Chagnon, then a Masters' Student in Landscape Architecture at Cornell.

In preparation for the upcoming fall project, STC advertised in its Spring 2000 newsletter for willing landowners of large parcels (over 100 acres preferred) with environmental features in need of preservation to take part in the project. A special mailing was also sent to area developers, engineering firms, and Soil & Water Conservation District offices for recommendations. Over the summer, STC heard from landowners in Steuben County and three parcels were identified. STC, with the assistance of Cornell's John Barney, prepared the base mapping which included air photos, tax parcel boundaries and slopes.



The Fall '00 class on a site visit to Dean Stuart's property.

the "conservation subdivision" process and posted their site inventory maps and proposed designs on the walls. Landowners shared their responses to the designs with the audience of 25 landowners, planning board members, engineers, and other local officials. Students spoke one-on-one with participants after the meeting to further describe their designs and receive feedback.



The Fall 2000 studio at an introductory meeting in the STC offices.

In October 2000, the 20 sophomore students of LA 201 and Professor Marvin Adleman gathered at STC to meet the landowners, discuss their vision for their properties, and visit the sites. Design work on the Stuart, Stevens and Tears properties was completed over November, culminating in the Rural Design Clinic Showcase Presentation on December 6, 2000 at the Corning City Council Chambers. The class prepared a powerpoint presentation on the "conservation



Julie Canter explains her work to Ted Sprague of the Corning Planning Board at the Showcase.



The Fall 2000 LA 201 class was: Bob Bell, Julie Canter, Brook Dannemiller, Brian Dold, Nik Elkovitch, Spencer Levine, Grace Lo, Dan Malone, Julia Milliken, Misako Murata, Emily Musall, Jedd Narsavage, Isaiah Parker, Anita Roth, Dave Roth, Nadine Soubotin, Greg Sparks, Scott Taft, Megan Tomkins, and Carlos Vargas. Sherry Frear, D.J. Chagnon, and Eve Minson served as Teaching Assistants (T.A.'s) to Professor Marv Adleman.

At the April 5, 2001 Southern Tier Central Local Government Conference, STC's Jennifer Fais and Cornell's D.J. Chagnon presented the "Rural Design Clinic Showcase," featuring the Steuben County case studies, to a large audience of local officials. The students' powerpoint presentation was adapted and expanded, and an audience-participatory discussion was held.

During the summer of 2001, sites were solicited in Schuyler County for a followup round of designs to expand the proposed workbook. Danielle Hauteniami, Schuyler County Planner, was key in locating willing landowners. Two sites were selected for study by a class of 13 sophomores during the fall semester (Mancuso and Greenwood/Brown). Again, STC provided the digital base mapping, and the class met on site with one of the landowners, Lynn Greenwood Brown, on November 12. A critique of the draft plans was held at Cornell in late November, with the final review and public meeting held at the Rural Urban Center in Montour Falls on December 12. About a dozen Schuyler County officials met to hear from the students and landowners about the recommended layouts.



(From L) Jennifer Fais and Lynn Greenwood-Brown study the work of Dustin John and Sean Corriel



(From L) Frank Mancuso talks with Anna Johansen and Blake Sanborn

Professor Adleman again ran the LA201 design studio, this year with Eun-Jin Kim as his T.A. The Fall 2001 class consisted of Benjamin Barrett, Heather Blaikie, Darragh Caldwell, Sean Corriel, Shannon Early, Kira Finney, Graham Howe, Anna Johansen, Dustin John, Elizabeth Jones, Brent Marcus, Edwina Powell, and Blake Sanborn.

In the Spring 2002 semester, Prof. Adleman turned to his studio class of first-year Masters' students. STC selected two sites in Chemung County (Boor and Clarke) for this round. The designs were presented to the community on May 9th, 2002, at the Rural Design Clinic, which was held at the CCC Airport Corporate Park facility.

The students in the Spring 2002 semester's LA502 class were: Jeanette Ankoma-Sey, Fred Cowett, Kevin Downing, Lynne Giesecke, Caroline Havey, Masha Hranjec, Danna Kinsey, Tashya Leaman, Bret LeBleu, Shu-Fang Liu, Sue Luescher, Darlene Myrie, Christine Simpson, and Jen Thomas. Prof. Adleman's Teaching Assistant for the semester was Deina Luberts.

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The Rural Design Workbook itself was prepared during the winter/spring 2002, and expanded summer 2002, under contract with D. J. Chagnon, who edited the text and digital images of student work, organized the graphic design of the pages, and worked in collaboration with Jennifer Fais, STC Principal Planner. The final version was prepared in Adobe PageMaker 6.5 on a Macintosh PowerPC, and saved as a .pdf file for easy distribution via the internet.

Future revisions to the workbook (as more sites are added) will also be made available online - check the STC website at <http://www.stcplanning.org> for updates. The new or revised chapters will be separately downloadable for easy printout and organization.

During the early fall of 2002, the Tioga County Water Quality Coordinating Committee solicited names of interested landowners and took Professor Marv Adleman of Cornell on a site selection tour to choose the two project sites. Once the sites were selected, Professor Adleman once again brought his LA201 class of sophomores to the project. Their work began on October 23, 2002 with a class trip to the Town of Spencer, where they visited both the Janiak and Rautine properties. The group came back on the 25th for a field visit to the Porter Sand & Gravel Mine and its associated developments. They then returned to the studio for several weeks of design.



The students tour "The Links."



Amanda Brown (R) discusses her design with Nanette Nelson, DEC.

Ciesielski, Jeannette Compton, Sarah Donato, Joshua Egnatz, Jon Ernsberger, Rebecca Francisco, Craig Johnson, Daniel Jost, John Knowlton, Scott Raasch, Cameron Spies, Betsy Stearns, Steve Waro, Stephanie Webster, and Blythe Yost.

Special thanks go to Wendy Walsh of Tioga County Soil & Water Conservation District; Elaine Jardine and Bryan Coates of Tioga County Planning; and Al Evans and his fellow members of Citizens for the Catatonk Creek. These individuals recommended excellent sites and encouraged their friends and neighbors to participate in the public presentation. Thanks also to Mr. Porter of Porter's Sand and Gravel, and to the manager and staff of The Links Golf Course for hosting the student site visit to learn about gravel mine reclamation, and to Nanette Nelson of the New York State Dept. of Environmental Conservation's Division of Mineral Resources for her help as a resource on constructed wetlands and mining processes.

On November 13, the clients arrived at Cornell for the interim presentation and their first opportunity for design review. This was followed up, several weeks later, by the final presentation to the clients at Cornell on December 9th. Following this event, the students spent time preparing for a planned public presentation on December 11th at Spencer Town Hall. The icy weather refused to cooperate, and the presentation was postponed to the following night, December 12th, at the Spencer-VanEtten High School.

The LA 201 class whose work is represented in the Tioga County section (chapters 12 and 13) consisted of Amanda Brown, Linda



The final presentation underway at Spencer-VanEtten High.



In the Spring of 2003, Professor Adleman's LA502 class of first-year MLA students worked on sites in Cortland County. They began with an initial site visit on April 9th, 2003, touring both the Power and Slade farms and getting a sense of the regional character of Cortland County and the Tioughnioga Valley. After an intensive two weeks of work in the studio, the students presented initial site plans to the landowners and Jennifer Fais at Cornell in an interim critique on April 21. With these comments and suggestions in hand, the students went back to their drafting tables and fleshed out their plans further for a final client presentation on May 7th. Then, as usual, a Powerpoint slide show was prepared, and the students gave a public presentation of their work to the Cortland community at Cortlandville Fire Station in the evening of May 8th, 2003.



The students tour the Slade site amid early April snows.



Spring 03's LA 502 class.

Special thanks to Cortland County Soil and Water Conservation District staff, Will Burnell and Pat Reidy, for preparing mapping and for soliciting interest from landowners; to Dan Dineen and Tricia

The LA502 class that semester consisted of: Avery Armstrong, Lisa Boege, Ning Cai, Deanna Curtis, Shalie Gasper, Ted Haffner, Imogene Hatch, Moon Koh, Allison Marusic, Erin Moriarty, Dorothy Murray, Kelly Pagano, Jane Padelford, Mary Ellen Russell, Jessica Schultz, and Chris Simone. Their work is showcased in chapters 14 and 15.



The final presentation at the Cortlandville Fire Station.



Professor Adleman and two students address the audience.

Sonyer-Littlejohn, Cortland County Planning Department, for background mapping and planning materials; to the Town of Homer and Virgil town supervisors, for meeting with the students to talk about their town master plans; and to the cooperating landowners: brothers Gary and Chuck Slade and their families; and Jerry and his daughter Dianna Power, for offering their properties as study sites for the project.

After three years of Design Clinics held in other counties, the Rural Design Workbook project returned to Steuben County in late fall of 2003. On Sept. 30, Marv Adleman met on site with landowners and Jennifer Fais, STC staff, to assess three potential study sites. On November 5, Marv Adleman and the Cornell LA 201 class made a site visit trip to the two selected locations. They met with Rita McCarthy, Town Manager for the Town of Erwin, to tour the "emerging growth area" along Jones Road in the Town of Erwin. Next, they visited with Jim and Pauline Tombs who showed the students land adjoining the hamlet of Curtis in the Town of Campbell including their property as well as the Sullivan and Horton properties. The students divided into project teams, and set to work on their designs.



View of the Horton property from the highway.



The Corning Inc. Sullivan Park Research Center overlooks the land accessible by Jones Road.

On November 17th, there was an interim critique at Cornell's landscape architecture studios, which was attended by Cornell's staff, Jennifer Fais, and John Sullivan and his wife. Despite the interruption of Thanksgiving weekend, the class continued work on their designs, and held a final design critique at Cornell on December 10th. That same day, a long article entitled "Clinic will focus on rural water quality" was printed in the Star-Gazette, explaining the project and encouraging people to attend. Meanwhile, the class compiled a presentation, packed the drawing boards up, and held a public presentation in the Corning-Painted Post West High School cafeteria. About 25 local officials, in addition to the landowners, attended the event billed as: "Steuben Rural Design Clinic, Completing Gang Mills: Designs for the Jones Road Area and Concepts for Curtis: Hamlet Design and Neighboring Farms."

Marv Adleman's class that semester consisted of: Chris Beagan, Brad Biren, Tom Brown, Theresa Dewey, Ian Dorko, Dan Evans, Jennifer Fedeson, Regan Harrold, Kevin Hasslewander, Taylor Korfhage-Poret, Ryan Macomber, Shelley Rank, Jessica Reed, Lindsay Reul, Tony Silva, Anya Vykopal, and Garrett Wasson. Their final designs are presented in chapters 16 and 17.



Landowners Jim and Pauline Tombs (center) talk about the project with Campbell Planning Board member, Robin Smith (left).



Erwin resident Kris West (L) and Town Manager Rita McCarthy (R) discuss layouts with students.

Special thanks to Jim Grace, Steuben County Cooperative Extension, and the Steuben County Water Quality Coordinating Committee for suggesting potential study sites; to Rita McCarthy, Town of Erwin Town Manager, and Saratoga Associates for guidance on Erwin's vision for the Jones Road area; and to landowners, Jim and Pauline Tombs, John and Mary Fran Sullivan, and Jeff Horton and family for making their properties available to the students for this project.



The Spring 2004 semester brought the final phase of the workbook, and Professor Adleman's LA 502 class worked on sites in Schuyler County. Sites were selected for the project through discussions with interested landowners in the late winter months, and the students began with a field trip to meet with Mark and Diann Murphy and John Fay on April 5th. Two weeks later, on April 19th, a presentation of conceptual designs was held at Cornell, with all the landowners, Jennifer Fais, and Danielle Hauteniemi, County Planner with Schuyler County Cooperative Extension, in attendance.



The final presentation at the Rural/Urban Center was well attended.



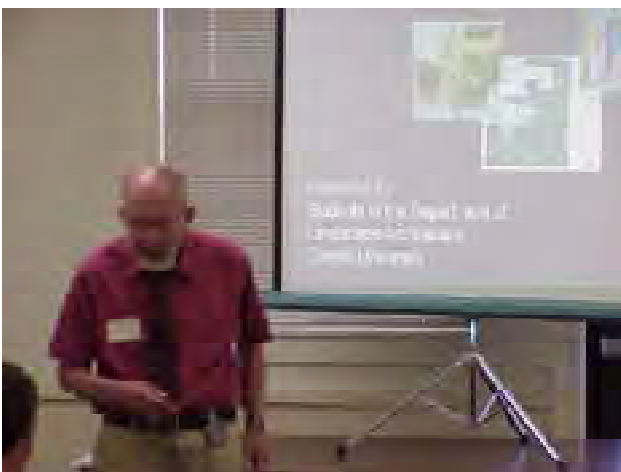
Mark Murphy, landowner, speaks with his neighbors about the student designs.

The members of the Cornell LA 502 class in Spring 2004 were: John Baran, Catherine Callahan, Jessica Chapman, Ellen Chase, Alison Endl, Sage Ferguson, Chia-Ling Hsu, Jeremy Kane, Jenny Mikulski, Kate Neal, Anna Plowden, Joshua Price, Cheryl Quinn, Olivia Shea, Sharda Voss, David Westmoreland, and Kamara Williams. Prof. Adleman was assisted this semester by Michele Palmer, a professional Landscape Architect.

With feedback from this discussion, the students took the conceptual designs forward. A second critique was held at Cornell on May 3rd in preparation for a final critique on May 11th. The designs were then presented to the public on May 12th at the Rural/Urban Center in Montour Falls; the theme was "Large Properties and Rising Taxes: What Do We Do?" About 25 local officials and landowners attended.



Jennifer Fais and John Fay discuss a project.



Professor Adleman introduces the PowerPoint slideshow.

Special thanks to: John Fay and Mark and Diann Murphy; Elaine Dalrymple of Schuyler County Soil & Water Conservation District; Danielle Hauteniemi; Karen Edelstein; Marv Adleman, Michele Palmer, and the Cornell Landscape Architecture Department staff and students, both for their work on this chapter and their longstanding commitment to the Rural Design Workbook. Special thanks also to Finger Lakes artists John Whiting, whose work can be seen online at [www.knottedlines.com](http://www.knottedlines.com), and Brian M. Hart, whose work is at [www.westendgallery.net](http://www.westendgallery.net), for allowing us to use their paintings.

During the early fall of 2002, the Tioga County Water Quality Coordinating Committee solicited names of interested landowners and took Professor Marv Adleman of Cornell on a site selection tour to choose the two project sites. Once the sites were selected, Professor Adleman once again brought his LA201 class of sophomores from Cornell to the project. They began on October 23, 2002 with a class trip to the town of Spencer and to both the Janiak and Rautine properties. They returned on the 25th for a field visit to the Porter Sand & Gravel Mine and its associated developments. Then it was back to the studios for several weeks of design .



The students tour "The Links".



Amanda Brown (R) discuss her design with Nanette Nelson, DEC.

On November 13, the clients arrived at Cornell for the interim presentation and their first opportunity for design review. This was followed up, several weeks later, by the final presentation to the clients at Cornell on December 9th. After this, the students spent time preparing for a planned public presentation on December 11th at Spencer Town Hall, but the icy weather refused to cooperate, and the presentation was postponed to the following night, December 12th, at the Spencer-VanEtten High School.

The LA 201 class whose work is represented in the Tioga County chapters (12 and 13) consisted of Amanda Brown, Linda Ciesielski, Jeannette Compton, Sarah Donato,

Joshua Egnatz, Jon Ernsberger, Rebecca Francisco, Craig Johnson, Daniel Jost, John Knowlton, Scott Raasch, Cameron Spies, Betsy Stearns, Steve Warto, Stephanie Webster, and Blythe Yost.

Special thanks go to Wendy Walsh of Tioga County SWCD; Elaine Jardine and Bryan Coates of Tioga County Planning; and Al Evans and his fellow members of Citizens for the Catatonk Creek; who recommended excellent sites and encouraged their friends and neighbors to participate in the public presentation. Thanks also to Mr. Porter of Porter's Sand and Gravel, and to the manager and staff of The Links Golf Course for hosting the student site visit to learn about gravel mine reclamation, and to Nanette Nelson of the NYSDEC Division of Minerals for her help as a resource on constructed wetlands and mining processes.



The final presentation underway at Spencer-VanEtten High.



The Cortland County sites were undertaken in the Spring of 2003 with Professor Adleman's LA502 class of first-year MLA students. They began with an initial site visit on April 9th, 2003, touring both the Power and Slade farms and getting a sense for the regional character of Cortland County and the Tioughnioga Valley. After an intensive two weeks of work, the students presented initial site plans to the landowners and STC at Cornell in an interim critique on April 21. With these comments and suggestions in hand, the students went back to the drafting tables and fleshed out their plans further for a final client presentation on May 7th. Then, as usual, a powerpoint slideshow was prepared, and the students gave a public presentation of their work to the Cortland community at Cortlandville Fire Station in the evening of May 8th, 2003.



The students tour the Slade site amid early April snows.



Spring 03's LA 502 class.

Special thanks to Cortland County Soil and Water Conservation District staff, Will Burnell and Pat Reidy, for preparing mapping and for soliciting interest from landowners; to Dan Dineen and Tricia Sonyer-Littlejohn, Cortland County

The LA502 class that semester consisted of: Avery Armstrong, Lisa Boege, Ning Cai, Deanna Curtis, Shalie Gasper, Ted Haffner, Imogene Hatch, Moon Koh, Allison Marusic, Erin Moriarty, Dorothy Murray, Kelly Pagano, Jane Padelford, Mary Ellen Russell, Jessica Schultz, and Chris Simone. Their work is showcased in chapters 14 and 15.



The final presentation at the Cortlandville Fire Station.



Professor Adleman and two students address the audience.

Planning Department, for background mapping and planning materials; to the Town of Homer and Virgil town supervisors, \_\_\_\_\_, for meeting with the students to talk about their town master plans; and to the cooperating landowners, Gary and his brother Chuck Slade, and Jerry and his daughter Dianna Power, for offering their properties as study sites for the project.

## B: Obtaining More Information

Since contact information is subject to change, we recommend that you contact STCRPDB if you need help getting more information about any of these funding sources or other tools and incentives. The following list matches each section of Chapter 3 with either the sponsor of the program, or a source of further information about that tool.

- **NYS Farmland Protection Program:** County Agricultural and Farmland Protection Boards, NYS Department of Agriculture and Markets.
- **Federal Farmland Protection Program:** USDA, Natural Resources Conservation Service
- **Forestry Incentive Program:** USDA, Natural Resources Conservation Service
- **Conservation Reserve Program - Erodible Land:** USDA, Farm Service Agency, Natural Resources Conservation Service
- **Conservation Reserve Program - Streamside Buffers:** USDA, Farm Service Agency, Natural Resources Conservation Service
- **Wetlands Reserve Program:** USDA, Natural Resources Conservation Service
- **Wildlife Habitat Incentives Program:** USDA, Natural Resources Conservation Service
- **Environmental Quality Incentives Program:** USDA, Natural Resources Conservation Service
- **Agricultural Management Assistance Private Grazing Land Initiative:** USDA, Natural Resources Conservation Service
- **Conservation Easements:** One good source of further information on conservation easements is the Finger Lakes Land Trust website, at <http://www.flit.org/ease.html>
- **Cluster Housing:** Check with your local zoning board or with STCRPDB for information regarding the options for clustered housing development in your area.
- **Homeowners' Associations:** More information about homeowners' associations is located in the article "Nuts & Bolts of Homeowners' Associations" by Richard Thompson, June 16, 1999, in the Realty Times, available in the online archive at: [http://realtytimes.com/rtnews/rtcpages/19990616\\_hoas.htm](http://realtytimes.com/rtnews/rtcpages/19990616_hoas.htm)

For more information on **Randall Arendt's proposed methods**, we suggest consulting some of his books or articles. Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks, Rural By Design: maintaining Small Town Character, and Growing Greener: Putting Conservation into Local Plans and Ordinances are all available through:

American Planning Association Planners Book Service  
122 S. Michigan Avenue, Suite 1600  
Chicago IL 60603  
312-786-6344



## C: Better Site Design reprint

The following pages are an excerpt from *Better Site Design*, reprinted with permission of the Center for Watershed Protection.





Source: Arendt 1996

## PRINCIPLE No. 11

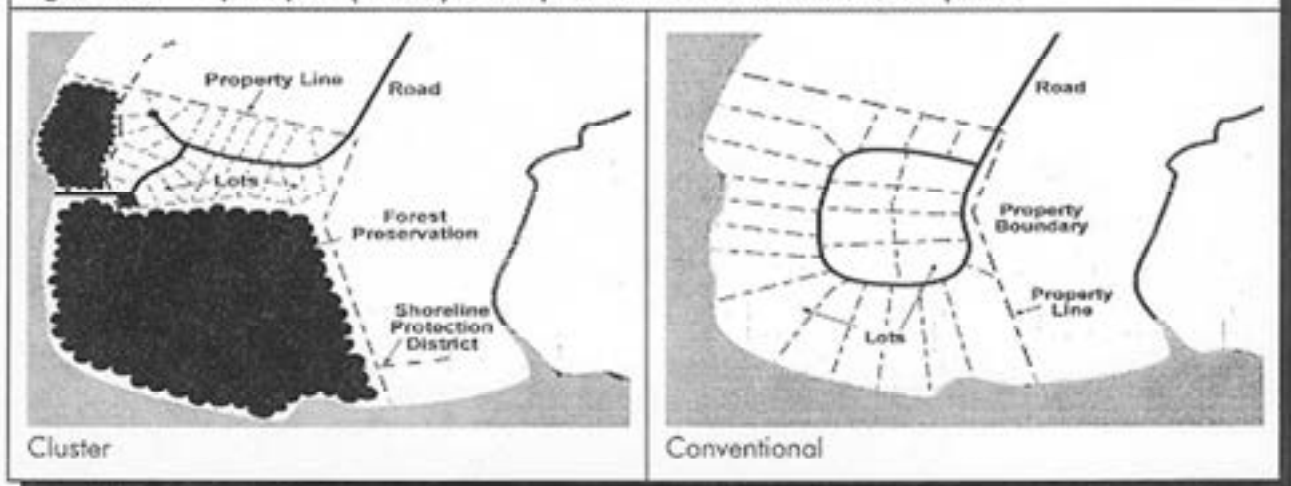
Advocate open space development that incorporates smaller lot sizes to minimize total impervious area, reduce total construction costs, conserve natural areas, provide community recreational space, and promote watershed protection.

### CURRENT PRACTICE

Open space development, also known as cluster design, is a compact form of development that concentrates density on one portion of the site in exchange for reduced density elsewhere. Minimum lot sizes, setbacks and frontage distances are relaxed to provide common open space (see Figure 11.1).

Although open space development has been advocated by planners for many years, they are not included in the zoning regulations in all communities. Those communities that do allow open space development have done so for reasons largely unrelated to stream protection such as community design, preservation of rural character, or creation of affordable housing (Heraty, 1992). Fifteen percent of communities that allow open space development also provide density bonuses as an incentive which could actually increase the amount of impervious cover created at a site.

Figure 11.1 Open Space (Cluster) Development versus Conventional Development



When communities allow open space development it is usually the exception rather than the rule. In 95% of communities surveyed by Heraty (1992), clustering is a voluntary, rather than a mandatory, development option.

As it turns out, open space development is not always a widely exercised option by developers. Open space designs often require a special permit exception or zoning variance (i.e., they are not a by-right form of development). On the average, only 37% of all new subdivisions in these communities were clustered. Further, 18% of the communities reported that they had yet to receive a cluster proposal since first implementing the cluster program. Developers using open space designs often must submit more studies and undergo closer review than developers of conventional developments.

Some early cluster developments were badly designed, made poor use of open space, and were not marketable. In addition, adjacent residents frequently opposed cluster developments due to fears about density, traffic congestion, and property values.

## RECOMMENDED PRACTICE

Communities that currently allow open space development or cluster designs may wish to re-evaluate their current criteria to determine if they really meet impervious cover reduction and land conservation goals. In addition, they may want to implement program changes that will provide additional incentives to developers to make greater use of this option. In particular, communities should consider making open space development a “by-right” development option. Many communities impose an extended special review process on developers of open space developments. The certainty and speed of project approval are a prime consideration for developers, and until both become comparable to conventional subdivisions, it is not likely that many developers will choose to use cluster designs.

Arendt (1994) has suggested that the side-by-side, visual comparison of open space and conventional subdivisions will go a long way toward gaining acceptance for these new concepts by plan reviewers and developers.

The ability to implement open space designs depends to a great extent on the base zoning density of the open space design. Flexibility sharply declines as the density of the base zone increases. Generally, high density residential zones (more than six dwelling units per acre) are not feasible for open space developments simply due to the lack of space.

## BENEFITS PROVIDED BY OPEN SPACE DESIGN

Some measure of the value of open space design in reducing impervious cover can be gleaned from a series of “redesign” analyses (see Table 11.1). In each case, an existing conventional residential sub-division was “redesigned” using open space design, and the resulting change in impervious cover was measured from the two plans. These studies suggest that open space designs can reduce impervious cover by 40 to 60%, when compared to conventional subdivision designs, particularly if narrow streets can also be utilized at the site. The value of open space designs in reducing impervious cover is evident over most residential zones, although only minor reductions in impervious cover occur in areas which used very small lot size (1/8 acre lots and smaller) in the original zoning.

Less impervious cover translates directly into less stormwater runoff. According to the redesign analysis presented in Table 11.1, open space designs can produce about a 20 to 60% reduction in the annual runoff volume from a site. A corresponding increase in the amount of infiltration and groundwater recharge is also predicted by hydrologic models for the site.

**Table 11.1: Redesign Analyses Comparing Impervious Cover and Stormwater Runoff from Conventional and Open Space Subdivisions**

| Residential Subdivision        | Conventional Zoning for Subdivision | Impervious Cover at the Site |                   |            | % Reduction in Stormwater Runoff |
|--------------------------------|-------------------------------------|------------------------------|-------------------|------------|----------------------------------|
|                                |                                     | Conventional Design          | Open Space Design | Net Change |                                  |
| Remlik Hall <sup>1</sup>       | 5 acre lots                         | 5.4 %                        | 3.7%              | - 31%      | 20%                              |
| Duck Crossing <sup>2</sup>     | 3-5 acre lots                       | 8.3 %                        | 5.4 %             | - 35%      | 23%                              |
| Tharpe Knoll <sup>3</sup>      | 1 acre lots                         | 13%                          | 7%                | - 46%      | 44%                              |
| Chapel Run <sup>1</sup>        | ½ acre lots                         | 29%                          | 17%               | - 41%      | 31%                              |
| Pleasant Hill <sup>3</sup>     | ½ acre lots                         | 26%                          | 11%               | - 58%      | 54%                              |
| Prairie Crossing <sup>4</sup>  | ¼ to ½                              | 20%                          | 18%               | - 20%      | 66%                              |
| Rapahannock <sup>2</sup>       | ½ acre lots                         | 27%                          | 20%               | - 24%      | 25%                              |
| Buckingham Greene <sup>3</sup> | ¼ acre lots                         | 23%                          | 21%               | - 7%       | 8%                               |
| Belle-Hall <sup>5</sup>        | High Density                        | 35%                          | 20% *             | - 43%      | 31%                              |

Sources: <sup>1</sup> Maurer, 1996; <sup>2</sup> CWP, 1998a; <sup>3</sup> DE DNREC, 1997; <sup>4</sup> Dreher, 1994; and <sup>5</sup> SCCCL, 1995.

Decreased stormwater runoff translates to less stormwater pollution. Again, several redesign analyses have compared the stormwater pollution loads of conventional and open space developments using simple models (see Table 11.2). As can be seen, significant reductions in stormwater pollutant loadings generally occur when open space designs are used—roughly on the order of what can be achieved if stormwater best management practices were installed at the conventional site.

**Table 11.2: Redesign Analyses Comparing Stormwater Pollution Loads from Conventional and Open Space Subdivisions**

| Residential Subdivision       | Change in Phosphorous Load | Change in Nitrogen Load | Other             |
|-------------------------------|----------------------------|-------------------------|-------------------|
| Remlik Hall <sup>1</sup>      | -42%                       | -42%                    |                   |
| Prairie Crossing <sup>2</sup> | -81%                       | N/A                     | 92% TSS reduction |
| Rapahannock <sup>3</sup>      | -60%                       | -45%                    |                   |
| Belle-Hall <sup>4</sup>       | -67%                       | -69%                    |                   |

Sources: <sup>1</sup> Maurer, 1996; <sup>2</sup> Dreher, 1994; <sup>3</sup> CWP, 1998; and <sup>4</sup> SCCCL, 1995.



## PERCEPTIONS AND REALITIES ABOUT OPEN SPACE DEVELOPMENT

Despite the apparent benefits of open space design, there are many barriers and impediments toward its widespread use. Developers, for example, are often reluctant to use open space design. Smaller lot sizes and compact development are sometimes perceived as less marketable, and the lack of speed and certainty in the review process can be a concern. Prospective homebuyers may be reluctant to purchase homes in open space developments due to concerns regarding management of the community open space. Open space developments are also often perceived as applying only to upscale and affluent consumers. Finally, local governments may be reluctant to promote open space development because they believe the public is opposed to open space design. Open space developments are sometimes opposed due to concerns about incompatibility with older developments and traffic noise and congestion. As several case studies have shown, many of these impediments can be successfully addressed through thoughtful site design and a clear local ordinance (see Table 11.4).

**Table 11.4: Perceived Impediments to Open Space Development**

| Perception  | Facts, Case Studies, and Challenges   |
|---|---|
| 1. Smaller lot sizes and compact development are perceived as less marketable.        | <p><b>FACT:</b> Many studies show that open space designs are highly desirable and have economic advantages including cost savings and higher market appreciation.</p> <p><b>FACT:</b> A survey of recent home buyers conducted by American Lives, Inc. noted that 77% of the respondents rated natural open space as extremely important (Fletcher, 1997).</p>                           |
| 2. Open space developments often require a special exception approval process.        | <p><b>CHALLENGE:</b> Generally, additional time, public hearings, and special reviews are required to implement open space designs, even when the community has an open space ordinance (see Principle No. 21). While developers are interested in reduced construction costs and market absorption rate, the total amount of time required for the project is a major driving force.</p> |
| 3. Community association management of open space areas can be unreliable.            | <p><b>FACT:</b> There are several options for maintaining open space which can be reliable when properly implemented (see Principle No. 17).</p> <p><b>FACT:</b> Natural open space reduces maintenance costs and can help keep community association fees down (Arendt et al., 1994).</p>  |
| 4. Open space developments are perceived as applicable only for upper income housing. | <p><b>FACT:</b> There are many examples of moderate and lower income open space developments (see Table 11.6).</p>  |

Table 11.4: Perceived Impediments to Open Space Development (Continued)

| Perception   | Facts, Case Studies, and Challenges   |
|--|---|
| 5. Open space developments are perceived as incompatible with adjacent land uses and are often equated with increased noise and traffic. | <p>FACT: Open space design allows preservation of natural areas, using less space for streets, sidewalks, parking lots, and driveways (BASMAA, 1997).</p> <p>FACT: A good design utilizing buffers can help alleviate incompatibility with adjacent land uses and still maintain the character of the area (NEIPC, 1997).</p> <p>FACT: Sound level is measured as a function of vehicle speed (AASHTO, 1994). Open space designs include skinnier streets and other traffic calming features which decrease the speed of cars (FHA, 1996), and consequently, the level of sound.</p> <p>FACT: If the number of residential units built is kept the same as the non open space designs, traffic impacts on the surrounding area should be similar.</p> |

### Marketability of Open Space Development

Many studies have shown that a well designed and marketed open space developments can be very desirable to home buyers. A few examples of successful open space developments are presented in Table 11.5.

Table 11.5: Some Examples of Successful Open Space Developments

| Subdivision         | Location         | % Open Space | Notes   |
|---------------------|------------------|--------------|---|
| Farmview            | Bucks County, PA | *            | The fastest selling subdivision in its price range with lots from ¼ to ½ the size of competing projects (Arendt, et al., 1994)  |
| Haile Plantation    | Gainesville, FL  | 29%          | Captured 14% of the Gainesville market in 1994 (Ewing, 1996)  |
| Palmer Ranch        | Sarasota, FL     | 36%          | 93% of existing wetlands at the site preserved<br>Accounted for 30% of new home market in Sarasota in 1994<br>Developer has experienced positive cash flow every year (Ewing, 1996) |
| Fields of St. Croix | Lake Elmo, MN    | 60%          | 80% of home sites in first phase sold within 6 months (NAHB, 1997)  |
| Chatman Village     | Pittsburgh, PA   | 64%          | Built during the Depression<br>Earned a 4.32% return on investment (NAHB, 1997)   |
| Westgreen           | Leesburg, VA     | 39%          | Targeted to young professionals and empty-nesters<br>Every lot in Phase I sold during first weekend (ULI, 1992)   |

\* More than 23% was preserved as open space and 31% was preserved as productive farm land.

**Table 11.5: Some Examples of Successful Open Space Developments (Continued)**

| Subdivision                     | Location       | % Open Space | Notes  |
|---------------------------------|----------------|--------------|--|
| Spinnaker Ridge                 | Gig Harbor, WA | 45%          | Targeted to young professionals and older families<br>Successful marketing campaign included radio and newspaper ads (ULI, 1992) |
| Apple Hill Lane                 | Duxbury, MA    | 55%          | Built in 1981, one of the first cluster developments in Duxbury<br>Approved within 2 months (Porter et al., 1988)                |
| Chinook Way at Fairview Village | Fairview, OR   | 40%          | Targeted to high wage earners and empty nesters<br>Mix of apartments and townhomes   |

### Open Space Management

Community associations are just one of several options for open space management. Other options include dedication to land trusts, establishing conservation easements, and local, state, or federal ownership. These various options are discussed in detail in Principle No. 15.

### Affordable Housing

Since housing prices tend to decrease as housing density increases, open space development could be used as one method for promoting affordable housing within local communities. The Haile Plantation development near Gainesville, Florida, represents one such community where the use of open space design techniques has yielded a variety of lot sizes and preserved significant expanses of agricultural, natural, and recreational open space areas (Ewing, 1996). As shown in Figure 11.2, several of the neighborhoods in Haile Plantation fall within the moderate income price range. These homes correspond to net densities of approximately two to five units per acre. Other examples of successful moderate- and lower-income open space developments are presented in Table 11.6.

### Quality of Life

A well designed open space development can enhance the quality of life in neighborhoods and communities. A 1996 homeowner survey revealed that 75% of all buyers would pay more to live in a community where one could walk and bike everywhere (Harney, 1996). Studies also show that traditional big lawns are not necessarily desirable by all prospective homeowners. In fact, a 1996 homeowner survey found that many homeowners are willing to tradeoff the bigger yard to upgrade housing amenities and housing design (Probuilder Magazine, 1997). Another study found that in households where both members of the couple are working, there is a strong preference for smaller lawns to keep lawn maintenance minimal (Newsweek, 1995).

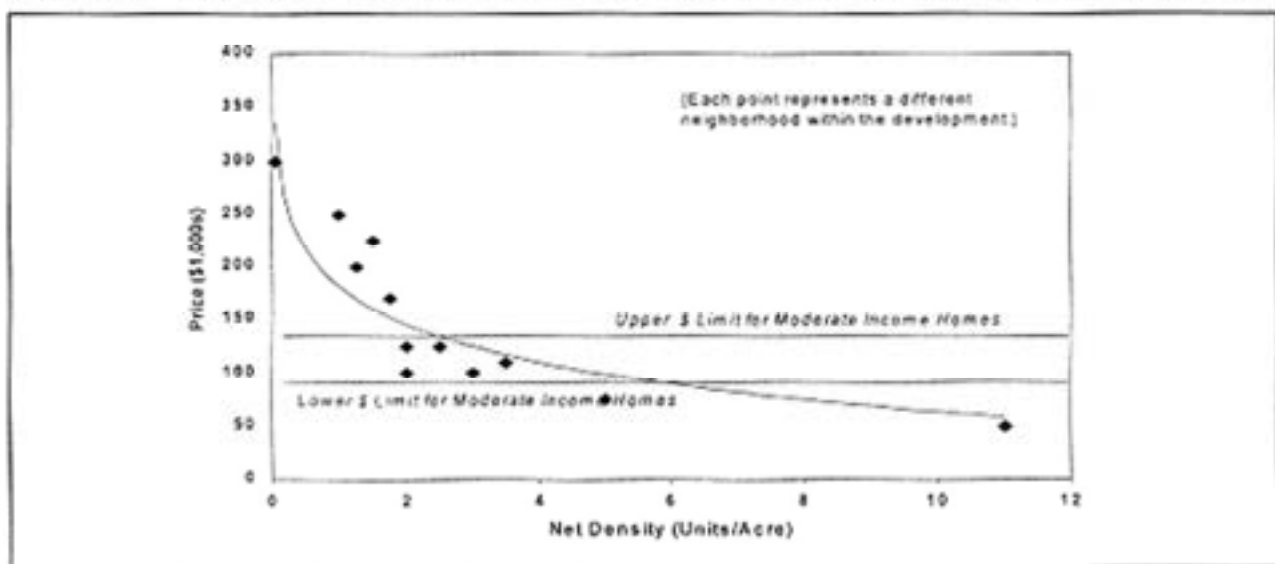
**Table 11.6: Moderate and Lower Income Open Space Developments\***

| Development Name           | Location        | Base Price Range      | Source      |
|----------------------------|-----------------|-----------------------|-------------|
| Haile Plantation           | Gainesville, FL | \$89,000 - \$134,000  | Ewing, 1996 |
| Oakbridge                  | Lakeland, FL    | \$50,000 - \$70,000   | Ewing, 1996 |
| Spinnaker Ridge            | Gig Harbor, WA  | \$122,000 - \$153,000 | ULI, 1988   |
| Westgreen                  | Leesburg, VA    | \$108,500 - \$119,500 | ULI, 1988   |
| Casa Del Cielo             | Scottsdale, AR  | \$118,900 - \$135,900 | ULI, 1988   |
| California Meadows         | Freemont, CA    | \$130,000 - \$171,000 | ULI, 1988   |
| Coach Houses of Town Place | Boca Raton, FL  | \$ 97,500 - \$143,000 | ULI, 1988   |
| Riverplace                 | New Haven, CN   | \$79,900 - \$179,900  | ULI, 1988   |
| Sea Colony                 | San Diego, CA   | \$34,500 - \$49,000   | ULI, 1988   |

\* The 1996 national average price for a new home was \$165,800 and \$144,600 for an existing home (NAHB, 1997)

## ECONOMIC BENEFITS

Open space development can be significantly less expensive to build than conventional subdivision developments. Most of the cost savings are due to savings in road building and stormwater management conveyance costs. The use of open space design techniques at a residential development in Davis, California provided an estimated infrastructure construction costs savings of \$800 per home (Liptan and Brown, 1996). Other examples demonstrate infrastructure costs savings ranging from 11 to 66%. Table 11.7 lists some of the projected construction cost savings generated by the use of open space redesign at several residential sites.

**Figure 11.2: New Home Prices Versus Net Density at Haile Plantation (Florida), based on Ewing (1996)**

*As the number of housing units per acre increases, the price of a new home drops.*



**Table 11.7 : Projected Construction Cost Savings for Open Space Designs from Redesign Analyses**

| Residential Development  | % Construction Savings | Notes  |
|--|------------------------|--|
| Remlik Hall <sup>1</sup>   | 52%                    | Includes costs for engineering, road construction, and obtaining water and sewer permits |
| Duck Crossing <sup>2</sup>   | 12%                    | Includes roads stormwater management, and reforestation                                  |
| Tharpe Knoll <sup>3</sup>  | 56%                    | Includes roads and stormwater management   |
| Chapel Run <sup>3</sup>  | 64%                    | Includes roads, stormwater management, and reforestation                                 |
| Pleasant Hill <sup>3</sup>   | 43%                    | Includes roads, stormwater management, and reforestation                                 |
| Rapahannock <sup>2</sup>   | 20%                    | Includes roads, stormwater management, and reforestation                                 |
| Buckingham Greene <sup>3</sup>   | 63%                    | Includes roads and stormwater management   |
| Canton, Ohio <sup>4</sup>  | 66%                    | Includes roads and stormwater management   |
| Sources: <sup>1</sup> Maurer, 1996; <sup>2</sup> CWP, 1998; <sup>3</sup> DE DNREC, 1997; <sup>4</sup> NAHB, 1986 |                        |  |

## CASE STUDY: FIELDS OF SAINT CROIX

The Fields of Saint Croix is an open space development in Lake Elmo, Minnesota. More than 60% of the 226-acre site is open space. Included in the open space is farmland, horticultural gardens, wooded slopes, and restored prairie (NAHB, 1998). Specific open space design techniques that are incorporated into the Field's of Saint Croix include:

- irregular-shaped and narrow lots
- a density transfer
- onsite treatment of stormwater runoff (Principle No. 22);
- thirty acres of prairie restored with native vegetation (Principle No. 20);
- a public transit stop located at the entrance to the development (Principle No. 7);
- miles of pathways through the common open areas (Principle No. 13); and
- a conservation easement guaranteeing the open space owned by the community association and the developer (Principle No. 15).

Eighty percent of the homes offered during the first phase of the development sold within six months. The second phase is expected to do equally as well.

While reviewing the Field's of St. Croix proposal, and based on the success of similar developments, the City of Lake Elmo decided to develop a comprehensive open space development ordinance. The ordinance provides a base density of six dwelling units per 20 acres with a density bonus for common areas, pathways, and historic preservation. This ordinance covers residential development in 4,400 acres of the city.

## WHERE TO GET STARTED

| Suggested Resources   | How to Get a Copy   |
|---|---|
| <b>Guidelines for Open Space Management in the Land Preservation District</b> by the Montgomery County (Pennsylvania) Planning Commission   | Montgomery County (Pennsylvania)<br>Planning Commission<br>Courthouse<br>Norristown, PA 19404<br>215-278-3722   |
| <b>Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks (1996)</b> by Randall Arendt<br>Discusses how to rearrange housing density so that no more than half of the buildable land becomes developed. Includes model zoning and subdivision ordinance provisions.  | American Planning Association<br>Planners Book Service<br>122 S. Michigan Avenue<br>Suite 1600<br>Chicago, IL 60603<br>312-786-6344   |
| <b>Rural by Design (1994)</b> by Randall Arendt<br>Provides information on alternative neighborhood designs, including open space design, street design, greenways, zoning, and growth management.  | American Planning Association<br>Planners Book Service<br>122 S. Michigan Avenue<br>Suite 1600<br>Chicago, IL 60603<br>312-786-6344   |
| <b>Site Planning for Urban Stream Protection. (1995)</b> by Thomas R. Schueler<br>Chapter 3 examines how conventional zoning techniques relate to stream quality and how local governments can institute watershed-based zoning.  | Center for Watershed Protection<br>8391 Main Street<br>Ellicott City, MD 21043<br>410-461-8323  |
| <b>Conservation Design for Stormwater Management (1997)</b> by the Delaware Department of Natural Resources and Environmental Control and The Environmental Management Center of the Brandywine Conservancy<br>Provides guidance for site design that incorporates conservation into land development. Emphasis is on retaining natural features in the development process to reduce the need for structural stormwater management controls. | Delaware Department of Natural Resources and Environmental Control<br>Division of Soil and Water Conservation<br>Sediment and Stormwater Program<br>89 Kings Highway<br>Dover, DE 19901 |

## D: Painted Post's Subdivision Law

The following pages contain excerpts from the Village of Painted Post's Conservation Subdivision Law. The full extent of the law is available online at the STCRPDB website (<http://www.stcplanning.org>) - click on "Data/Reports", then on "Model Laws".

### CHAPTER 233 SUBDIVISION REGULATIONS

#### Village of Painted Post ARTICLE I GENERAL PROVISIONS

##### § 233-1 PURPOSE AND CONTENT.

The purpose of establishing the Village of Painted Post Subdivision Regulations is to provide for the orderly growth and development of the Village and to afford adequate facilities for the housing, transportation, distribution, comfort, convenience, health, safety and welfare of the Village's population. These regulations establish requirements for action on subdivision plats, including a description of maps and supporting materials which the Planning Board requires to carry out its responsibilities under these regulations. These requirements include the four-step Conservation Subdivision Design Process (as described in Article III) and Cluster Development (Article III) whose purpose shall be to encourage flexibility of design and land conservation and to develop land in such manner as to preserve the natural and scenic qualities of open lands while reducing the construction and maintenance costs of infrastructure. The review and approval procedures contained herein are designed to safeguard the community.

##### § 233-2 AUTHORIZATION; PURPOSE.

<snip>

##### C. CLUSTER DEVELOPMENT.

1. **Approval With Subdivision Plat.** In accordance with Section 7-738 of the Village Law of the State of New York, the Village Board of Trustees authorizes the Planning Board to approve a cluster development simultaneously with the approval of a plat pursuant to the provisions of these subdivision regulations.
2. **Permitted in Certain Zoning Districts.** Cluster development subdivisions are permitted in areas within the Village of Painted Post as noted in The Village of Painted Post Zoning Law Article III, Section 280.18, Use Regulations.

<snip>

##### § 233-5 GENERAL POLICY FOR SUBDIVISION DESIGN AND REVIEW.

- A. **APPROPRIATENESS.** It is declared to be the policy of the Planning Board to consider land subdivisions as part of a plan for the orderly, efficient and economical development of the Village in a manner that is reasonable and in the best interests of the community.

B. **GUIDING PRINCIPLES.** The Planning Board will be guided in its consideration of an application for the subdivision of land by the following requirements:

1. **Physical Characteristics.** The physical characteristics of the land to be subdivided shall be such that it can be used safely for building purposes without danger to health or peril from fire, flood, drainage or other menace to neighboring properties or the public health, safety and welfare. Proper provision shall be made for drainage, water supply, sewage and other needed improvements. All parcel developments shall meet Village, County, State, and Federal health requirements.
2. **Natural and Historic Features.** Insofar as possible, all existing features of the landscape such as large trees, rock outcrops, unusual glacial formations, water and flood courses, historic sites and other such irreplaceable assets shall be preserved.
3. **Conformance with Village Local Land Use Laws and Policies.** Subdivision plans shall be in conformance with the Village of Painted Post Zoning Law and shall be properly related to the Village Comprehensive Plan as it is amended and used for guidance by the Planning Board.
4. **Neutral To Positive Tax Impact.** A subdivision's long and short term impacts on the site, the surrounding neighborhood and the Village as a whole, (such as police/fire/schools/road maintenance/pool parks/ and other Village infrastructure) are neutral or a positive contribution to the Village tax base, as described in the Long Environmental Assessment Form.
5. **Buildable Land Calculations.** Density of a subdivision is calculated on net acreage, not gross acreage, of buildable land according to the following guidelines:
  - A. **UNBUILDABLE LAND.** The subdivider shall identify and subtract all acreage considered to be unbuildable as follows:
    - (1) Steep slopes 25% or greater
    - (2) Floodways as defined by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary maps as amended
    - (3) Wetlands, including New York State designated wetlands, those regulated by the US Army Corps of Engineers and those on the National Wetlands Inventory
    - (4) Lands covered by water bodies
    - (5) Aquifer Protection Overlay Districts #1 and #2 as defined by the Village of Painted Post Zoning Law Article III
    - (6) Stream corridors (50' setback from each streambank)
  - B. **DENSITY CALCULATIONS.** The subdivider shall then calculate the acreage that is determined to be buildable and apply the bulk density control schedule minimum square footage per dwelling units or principal buildings as defined in Article IV of the Village Zoning Law to the buildable acreage. All density values shall be rounded to the nearest whole number of dwelling units or principal buildings.



6. **Cluster Development.** When five (5) or more acres are considered “buildable,” the subdivider shall submit an application for a Cluster Development as described in Article III in which a percentage of the gross acreage, as determined by the Planning Board, is permanently set aside.
- A. **MAXIMUM DENSITY.** A cluster development shall result in a permitted number of building lots or dwelling units which shall in no case exceed the number which could be permitted, in the Planning Board’s judgment, if the land were subdivided into lots conforming to the minimum lot size and density requirements of the zoning local law applicable to the district or districts in which such land is situated and conforming to all other applicable requirements. (see Village of Painted Post Density Control Schedule Article IV, Section 280.28).
- B. **CUMULATIVE DENSITY.** In cases where the plat falls within two or more contiguous districts, the Planning Board may approve a cluster development representing the cumulative density as derived from the summing of all units allowed in such districts, and may authorize any actual construction to take place in all or any portion of one or more of such districts.
7. **Conventional Plat.** When less than five (5) acres are considered “buildable” or when the subdivider can demonstrate that a traditional subdivision layout would be in the best interest of the community and would be compatible with the characteristics of the site, the subdivider may submit a conventional subdivision plat.
8. **Incentive Zoning.** When the site is not buildable or if a proposal is inconsistent with the Master Plan, the subdivider is encouraged to submit a plat in accordance with the Village of Painted Post Zoning Law Article VII, Transfer of Development Rights.

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## ARTICLE II INTERPRETATION AND DEFINITIONS

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### § 233-15 **DEFINED TERMS.**

For the purpose of these regulations, certain words and terms used herein are defined as follows except where the context shows otherwise:

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**SUBDIVISION:** The division of any parcel of land into a number of lots, blocks or sites as specified in this regulation, with or without streets or highways, for the purpose of sale, transfer of ownership, or development. The term “subdivision” includes any alteration of lot lines or dimensions of any lots or sites shown on a plat previously approved and filed in the office of the Steuben County Clerk, (See “resubdivision” below).

Cluster Development: A subdivision plat or plats, approved pursuant to 7-738 of Village Law of the State of New York, provides a preferred method alternative to the strict adherence to the Village of Painted Post Zoning Local Law Bulk Density Control Schedule for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, common open space, parks and landscaping in order to preserve the natural and scenic qualities of open lands.

Conceptual Preliminary Plat: A scaled drawing in which ideas are illustrated before engineering costs are incurred in preparing such plat elements as detailed alignments and profiles for streets, and/or detailed calculations for stormwater management.

Conceptual Preliminary Plat Approval: The approval of the layout of a proposed subdivision as set forth in a conceptual preliminary plat but subject to the approval of the plat in final form.

Conservation Area, Primary: Unbuildable land areas comprising floodways, wetlands, slopes over twenty-five percent (25%), waterbodies, aquifer protection areas and fifty foot (50') stream corridors.

Conservation Area, Secondary: Natural and cultural resources and noteworthy features of the property (i.e.; mature woodlands, trails, stream corridors, prime farmland, hedgerows, historic sites, scenic views, etc.,) which are “buildable” but are recommended for inclusion in permanent open space.

Conservation Subdivision: A subdivision designed around the central organizing principle of land conservation in accordance with the four step conservation design process that is intended to be effective in laying out new full-density developments where all significant natural and cultural features have been preserved. (STEP ONE: Identify Primary and Secondary Conservation Areas, STEP TWO: Locate House Sites, STEP THREE: Align Streets and Trails, STEP FOUR: Draw in Lot Lines.)

Final Plat: A detailed drawing prepared in a manner prescribed by Article III, that shows a proposed conservation subdivision, containing all information required to be shown on a conceptual preliminary plat and modifications, if any, required by the Planning Board at the time of approval of the conceptual preliminary plat.

Final Plat Approval: The signing of a plat in final form by a duly authorized officer of the Planning Board pursuant to a Planning Board resolution granting final approval to the plat or after conditions specified in a resolution granting conditional approval of the plat are completed. Such final approval qualifies the plat for recording in Steuben County Clerk’s Office.

Final Plat Conditional Approval: Approval by a Planning Board of a final plat subject to conditions set forth by the Planning Board by resolution conditionally approving such plat. Such conditional approval does not qualify a final plat for recording nor authorize issuance of any building permits prior to the signing of the plat by a duly authorized officer of the Planning Board and recording of the plat in the office the Steuben County Clerk.

Plat: Drawings and final plans for related improvements prepared in accordance with these regulations showing, in final form as specified in Article III, Section 233-19, a proposed subdivision of a tract of land which, if approved, is suitable for filing in the office of the Steuben County Clerk.

Resubdivision: A change in a map of an approved or filed subdivision plat if involving only lot line alterations, and does not cross a municipal boundary, and if such change does not affect any street

layout shown on such major area reserved for public use.

Sketch Plan: The optional, rough, diagrammatic plan that precedes the Conceptual Preliminary Plat. The Sketch Plan may be prepared as an overlay sheet placed on top of the Existing Resources and Site Analysis Plan as detailed in Article III. The drawing/overlay is intended to show in sketch form the general manner in which a tract of land is proposed to be subdivided.

Subdivider: Any person, firm, corporation, partnership, or other organization which lays out any subdivision as defined herein.

Undeveloped Subdivision: Those plats where 20% or more of the lots within the plat are unimproved unless existing conditions such as poor drainage have prevented their development.

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### **ARTICLE III**

#### **SUBDIVISION APPLICATION SUBMISSION REQUIREMENTS AND PLAN/PLAT CONTENT**

#### **§ 233-16      OVERVIEW.**

This article describes the purpose, elements and specifications of sketch plans, conceptual preliminary plats and final plats so that each builds upon the other in an orderly manner.

#### **§ 233-17      OPTIONAL SKETCH PLAN.**

- A.    **PURPOSE.** The purpose of this optional step is to afford the subdivider an opportunity to consult early and informally with the Planning Board. Sketch Plan submission is strongly encouraged by the Village as a way of helping applicants and officials develop a better understanding of the property and to help establish an overall design approach that respects its special or noteworthy features, while providing for the density permitted under the zoning local law.
- B.    **ELEMENTS.** The Sketch Plan should include any or all elements of the Conceptual Preliminary Plat. The Sketch Plan may be prepared as an overlay sheet placed on top of the Existing Resources and Site Analysis Plan. To encourage the use of this Plan and to offer incentives by defraying costs at this phase to subdividers, certain data will be available through the Village.
- C.    **SPECIFICATIONS.** The sketch plan shall be drawn on paper or other suitable material at a standard scale of not more than two hundred (200) feet to the inch.

#### **§ 233-18      CONCEPTUAL PRELIMINARY PLAT.**

- A.    **OVERALL PURPOSE.** A Conceptual Preliminary Plat sets the direction for development of the parcel and provides enough information on which to undertake environmental review without costly engineering expense to the developer.

- B. **ELEMENTS.** The Conceptual Preliminary Plat is made up of the following elements which are described in detail below.

1. **Site Context Map**

- A. **SPECIFIC PURPOSE:** to show the location of the proposed subdivision within its neighborhood context.
- B. **ELEMENTS:**
- (1) Location of the affected tax parcel on the Village of Painted Post Zoning Map showing nearby creeks, roads, zoning districts, NYS certified Agricultural Districts, adjacent properties, public buildings such as schools and hospitals, public land such as parks, twenty foot (20') contours and other appropriate information to orient the Planning Board.
  - (2) Title of the sketch, including name and address of the subdivider, north point, scale, and date.
- C. **SPECIFICATIONS:**
- (1) For sites under 100 acres in area, such maps shall be at a scale not less than 1"=200', and shall show the relationship of the subject property to natural and man-made features existing within 1,000 feet of the site.
  - (2) For sites of 100 acres or more, the scale shall be 1"=400' and shall show the above relationships within 2,000 feet of the site.

2. **Existing Resources and Site Analysis Plan.**

- A. **SPECIFIC PURPOSE:** To provide the developer and the Village with a comprehensive analysis of existing conditions, both on the proposed development site and within 500 feet of the site.  
Conditions beyond the parcel boundaries may be described on the basis of existing published data from governmental agencies, and aerial photographs. To help defray the cost to subdividers, some data will be available through the Village of Painted Post.
- B. **ELEMENTS:**
- (1) A vertical aerial photograph (enlarged to a scale not less than 1"= 400'), with the site boundaries clearly marked overlaid by tax parcel boundaries noting vegetative cover conditions on the property such as cultivated land, permanent grassland, meadow, pasture, old field, hedgerow, woodland and wetland, trees with a DBH (Diameter at Breast Height) in excess of 15", the actual canopy line of existing trees and woodlands.



Vegetative types shall be described by plant community, relative age and condition, if known.

- (2) USGS published topographic maps with 10 foot contour intervals. Interpolated or appropriate contour intervals shall be determined by the Planning Board, which may specify greater or lesser intervals on exceptionally steep or flats sites.
- (3) Soils mapping, soil series, types and phases, as mapped by the USDA Natural Resources Conservation Service in the published Soil Survey for Steuben County, and accompanying data published for each soil relating to its suitability for construction (and, in unsewered areas, for septic suitability).

3. **Four Step Overlay Design Process.**

- A. **REVERSE SEQUENCE.** This approach reverses the sequence of steps in laying out conventional subdivisions. Streets and lot lines are the last features to be identified in this design process after the delineation of conservation areas/developable land and building locations.
- B. **FOUR OVERLAYS.** The subdivider shall submit four separate overlay sketches indicating the findings of each step of the design process, if requested by the Village Planning Board.

**Step One, Part One Identify Primary Conservation Areas.**

These are “unbuildable” lands as described in Article V, Section 233-5 B.5.A. Buildable Land Calculations.

**Step One, Part Two. Identify Secondary Conservation Areas.**

These are those areas recommended for conservation/preservation, but which could be disturbed or removed by development upon approval by the Planning Board.

- A. **VEGETATIVE COVER.** Vegetative cover types to be considered secondary conservation areas as designated by the Planning Board. See Article V, Section 233-55 Woodlands and Article V, Section 233-57 Significant Natural Areas and Features.
- B. **SOILS.** Soils unsuitable for construction or onsite sewage disposal.
- C. **NATURAL BOUNDARIES.** Ridge lines and watershed boundaries.
- D. **VIEWSHED.** A viewshed analysis showing the location and extent of views into the property from public roads and from public parks, public forests, and state game lands.
- E. **GEOLOGY.** Geologic formations on the proposed development parcel, including rock outcroppings, cliffs, sinkholes, and fault lines, based on available published information.
- F. **CONSTRUCTED FEATURES.** All existing constructed features including but not limited to streets, driveways, farm roads, woods roads, buildings, founda-

tions, walls, wells, drainage fields, dumps, utilities, fire hydrants, and storm and sanitary sewers.

- G. HISTORIC SITES. Locations of all historically significant sites or structures on the tract, including but not limited to cellar holes, stone walls, earthworks, and graves.
- H. TRAILS. Location of existing and proposed trails (pedestrian, equestrian, bicycle, etc.).
- I. EASEMENTS. All easements and other encumbrances of property which are or have been filed of record with the Steuben County Clerk.
- J. ACREAGE. Total acreage of the tract, plus Buildable Acreage with detailed supporting calculations per Article V, Section 233.5.

### **Step One, Part Three Identify Potential Development Area.**

After delineating the Primary and Secondary Conservation Areas, the remaining part of the property becomes the Potential Development Area Map.

### **Step Two Locate House Sites.**

- A. LOCATION. Potential house sites shall be tentatively located using the Potential Development Area Map as a base map and other relevant data on the Existing Resources and Site Analysis plan (such as topography and soils).
- B. RELATION TO OPEN SPACE. Generally, house sites should be located not closer than 100 feet from Primary Conservation Areas and 50 feet from Secondary Conservation Areas.( considering the potential negative impacts of development to such areas as well as positive benefits (such as locations to provide attractive views.)

### **Step Three Align Streets and Trails.**

- A. ALIGNMENT. After house sites have been designated, a preliminary street plan shall be designed to provide vehicular access to each house, generally in accordance with standards in Article V, showing tentative rights-of-way and suggested street names.
- B. IMPACTS. Generally, street design shall be encouraged to minimize impacts on Primary and Secondary Conservation Areas and other open space.
- C. TRAILS. A system of trails providing pedestrian/bike access should be designed to link to neighboring trails and to provide access to open space as described in Article V, Section 233.56.

### **Step Four Draw in the Lot Lines.**

After completion of the preceding three steps, lot lines, showing approximate dimensions, are to be drawn to delineate the boundaries of individual residential lots and the

remaining permanent open space. The lots shall show setbacks and shall be numbered maintaining 50% or more of the parcel in open space is encouraged.

4. **Long Environmental Assessment Form (EAF).**

- A. PURPOSE: to demonstrate that the subdivider has minimized site disturbance, and impacts on the Village of Painted Post to the greatest extent practicable resulting in either a no-net-loss or in a gain to the Village tax base.
- B. ELEMENTS: A completed EAF with supporting documentation as required by the Planning Board.
- C. SPECIFICATIONS: Per direction by the Planning Board.

5. **Preliminary Improvements Construction Plan.**

- A. PURPOSE: To identify and describe related site improvements as an overlay to the Existing Resource and Site Analysis Plan.
- B. ELEMENTS:
  - (1) Description and tentative location of existing and proposed water lines or wells and a description of the source of water.
  - (2) Conceptual layout of proposed sewer lines, if applicable, where community sewage service is to be permitted. Location of all percolation test, including all failed test sites, for all on site disposal systems, if applicable. All approved sites shall be clearly distinguished from unapproved site.
  - (3) Approximate location of existing drains, culverts, proposed swales, drainage easements, stormwater management facilities.
  - (4) Approximate location and dimensions of proposed playgrounds, public buildings, public areas and parcels of land proposed to be dedicated or reserved for public use.
  - (5) Location of all other proposed permanent open space and brief description of its ownership and long term maintenance.
  - (6) Description of generalized landscaping plan including discussion of street trees and other plantings on dedicated and nondedicated open space.
  - (7) If land to be subdivided lies partly in or abuts another municipality, the applicant shall submit information concerning the location and conceptual design of streets, layout and size of lots and provisions of public improvements on land subject to the applicant's control within the adjoining municipalities. Evidence of approval of this information by appropriate officials of the adjoining municipalities also shall be submitted.

6. **Preliminary Studies and Reports.**

A. **PURPOSE:** The Conceptual Preliminary Plat may include one or more of the following elements to assist the Board in the determination of the impact of the application upon municipal services and facilities.

B. **ELEMENTS:**

- (1) Municipal sewer and water feasibility study
- (2) Groundwater protection and recharge study
- (3) Erosion and sedimentation control plan
- (4) Stormwater management and preliminary drainage report
- (5) Flood impact study
- (6) Traffic impact study
- (7) Community services and tax base impact study

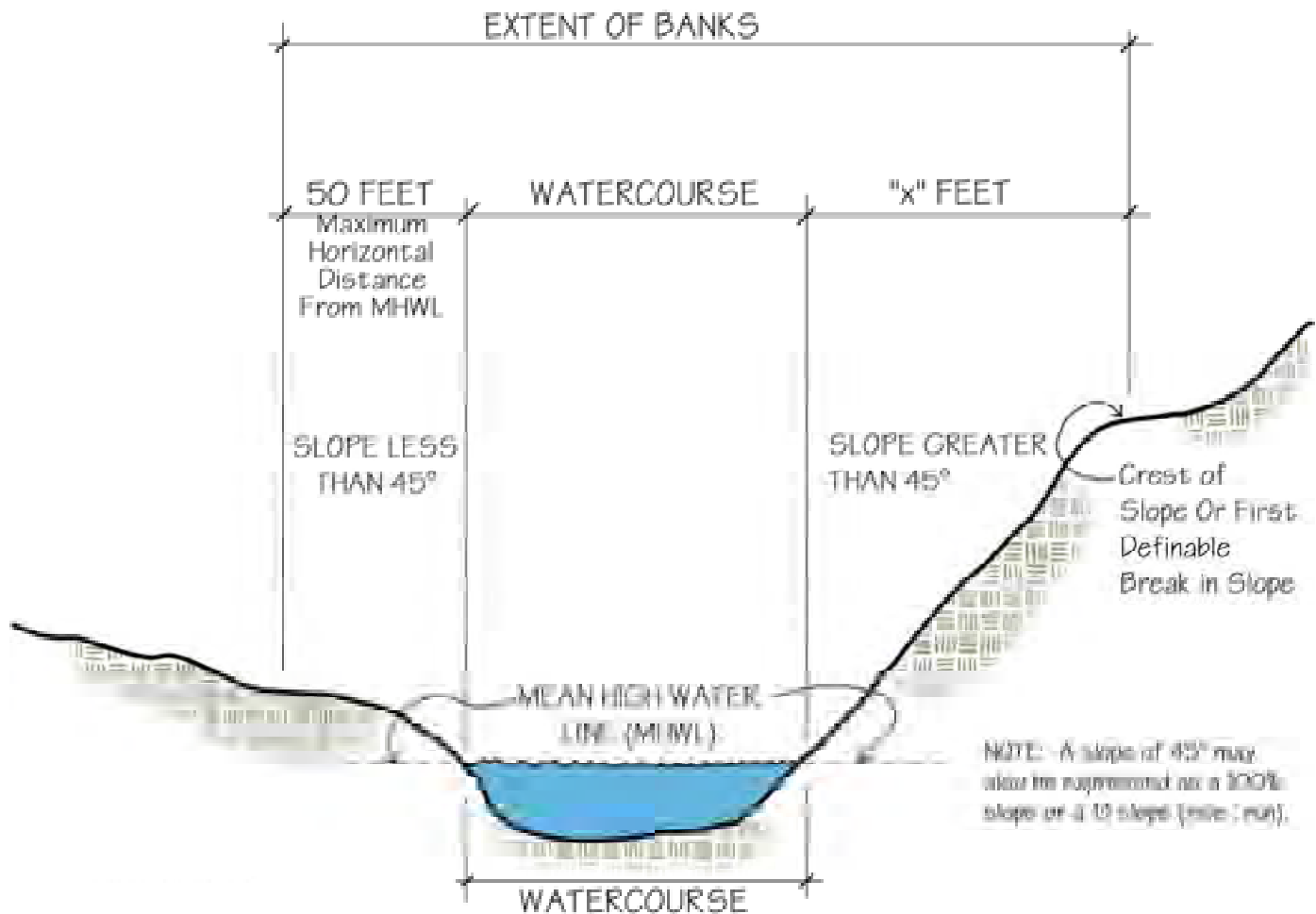


## E: Defining a Streambank

The diagram below provides a visual definition of the extent of a streambank. The distance from the Mean High Water Line (MHWL) to the end of the bank as defined in codes and for the use of programs depends on the slope of the bank.

For slopes of less than  $45^\circ$ , which are those that have a vertical rise of no more than one foot per horizontal foot traveled (what is known as a 1:1, or 100% slope), the bank is defined as extending for no more than 50 feet horizontally from the edge of the watercourse.

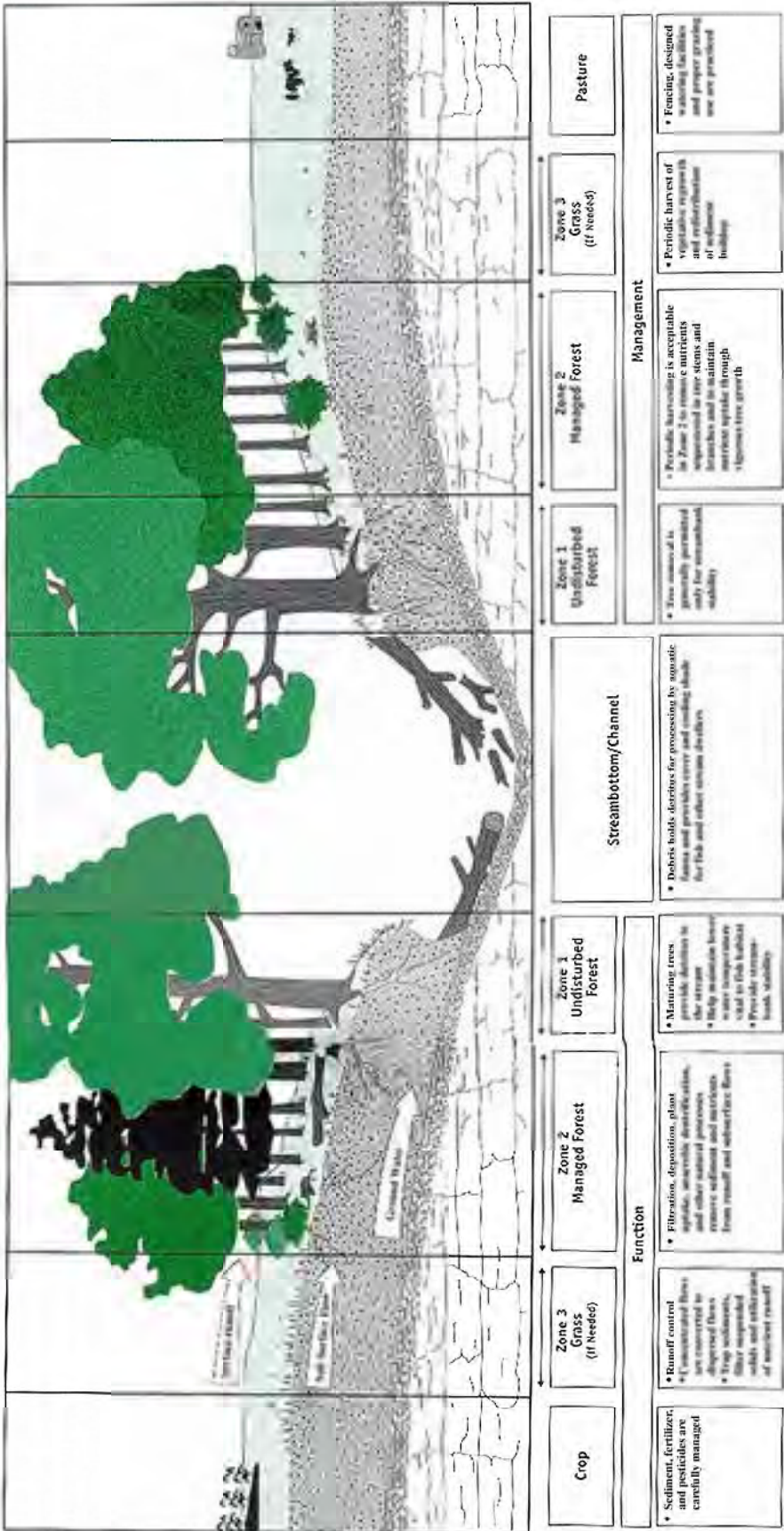
For slopes greater than  $45^\circ$  (those that have a rise-to-run ratio of greater than 1:1, or 100%), the streambank extends to the crest of the slope or the first notable break in the slope.



F: Riparian Buffers

The following brief discussion of riparian buffer zones is reprinted from the Chesapeake Bay Program's "Riparian Forest Buffers: Linking Land and Water," U.S. Environmental Protection Agency, March 1999, p. 14-15.

Riparian Buffers:  
Stabilizing Future Water Quality through Creative Planning



## ***What is a riparian buffer zone?***

Riparian zones are vegetated areas along the banks of streams, consisting mainly of trees, that form a transitional boundary between aquatic and terrestrial ecosystems. Riparian zones are critical to the health of the environment by acting as a buffer that protect and maintain streams within their respective watersheds. In riparian zones, upland areas merge with nearby streams, rivers, lakes, and other water bodies, allowing for a crucial exchange of energy and matter to occur.

Many experts, including those at the Chesapeake Bay Program, view riparian buffers as consisting of three zones that border the streambed. Each area has its own management requirements and functions, which vary from site to site. These zones, shown below, are as follows:

- 1) undisturbed forest, which is a mixture of fast and slow growing trees
- 2) managed forest, consisting of timber for harvest, wildlife habitat, and recreational zones, and 3) areas of grass, managed to promote the uptake of nutrients and the filtration of sediments.

Source: *US EPA Chesapeake Bay Program, March 1999 Reprint.*

## ***Why is it important to establish and protect riparian buffers zones?***

Riparian zones form the “natural barrier” between water and the land, cushioning each ecosystem from activities occurring within the watershed while simultaneously providing for the stability of the area’s environmental health. The following vital functions are performed by riparian zones:

- Flood attenuation - The root systems in riparian zones continuously take up, store, and discharge water in a way that slows the rate of water during a flood and reduces the impact of high water on downstream areas.
- Filtration of runoff and sedimentation reduction - Forested riparian zones have a substantially higher rate of infiltration of pesticides, fertilizers, and sediments than non-forested zones. This is because the trees have the ability to absorb and modify a large amount of the pollutants migrating through riparian zones before they make their way into the water. The bacteria present at the forest floor also encourages the process of denitrification, where nitrate, a nutrient that would otherwise be harmful to the water, is converted into nitrogen gas.
- Streambank stability - Deep tree roots help to secure the soil in fragile riparian zones. This allows for a reduced rate of soil erosion and the stabilization of stream banks..
- Provision of a canopy - The shade from the forest moderates the temperature and oxygen content of the water, which is essential for both proper stream health and the functioning of aquatic organisms. The canopy also acts as a food source for many bottom-dwellers of the aquatic food chain when leaves, branches, and logs enter the water.
- Habitat diversity - Riparian zones supply critical layers of habitat that are required by both aquatic and terrestrial species at some point in their life cycles. It provides a gateway for wildlife of the different ecosystems, and is an ideal living environment for reptiles and amphibians.
- Encourages long-term ecosystem health - Riparian zones cushion the interaction between aquatic and terrestrial ecosystems to ensure that the activities within one do not overwhelm the functions of the other.

Overall, riparian zones offer a form of protection that is irreplaceable to both aquatic and terrestrial conservation efforts. They are economical to maintain, especially when compared to the construction and maintenance costs of flood damage repair, erosion control measures, habitat restoration, and pollution clean up.

By requiring the protection of riparian areas in zoning laws through the establishment of stream setbacks and site plan review for activities within the buffer, communities can protect their water resources for the future and prevent many water quality problems today.