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Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development

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Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development

Volume Two





Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development

January, 1988

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Hadley, Massachusetts

Foreword

The Connecticut River Valley is one of the most beautiful and historic landscapes in Massachusetts, and has a special quality of life that makes it an increasingly popular place to live, work, and visit.

Demand for vacant land suitable for housing, employment, and commercial activities has increased in response to an expanding economy. However, as unplanned growth overtakes the Valley's small towns, fertile farm fields, scenic views, and centuries-old local character are disappearing. Frequently, towns' reactions to those challenges -- zoning, subdivision and other bylaws -- only add to the consumption of land, and the costs and impacts of development.

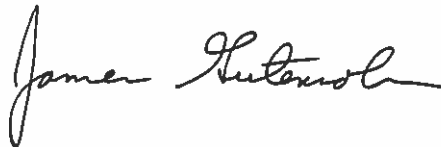
In response to this situation, the Massachusetts Department of Environmental Management (DEM) created the Connecticut Valley Action Program, a planning initiative in which 19 towns and cities bordering the Connecticut River are encouraged to plan for their futures and for the protection of their natural resources.

The pages which follow are the result of a collaborative effort funded by DEM's Action Program and carried out by the Center for Rural Massachusetts, located on the Amherst campus of the University of Massachusetts. The Center's principal task was to develop practical planning standards which towns may adopt to protect their distinctive character, while at the same time accommodating economic growth.

The planning approach advocated by the Center is based upon traditional New England design principles, and amply demonstrates that conservation and development goals need not be mutually exclusive. We hope this cooperative project between DEM and the University will encourage greater cooperation between town governments and the development community, so that future growth patterns in the Valley will better respect the region's special character and resources.



Joseph D. Duffey
Chancellor
University of Massachusetts at Amherst



James Gutensohn
Commissioner
Department of Environmental Management

"From Mt. Holyoke is seen the richest prospect in New England, and not improbably, the United States....The variety of farms, fields, and forests, of churches and villages, of hills and valleys, of mountains and plains comprised in this scene can neither be described nor imagined. But the most exquisite scenery of the whole landscape is formed by the river and its extended margin of beautiful intervals....It is generally one fourth of a mile wide; and its banks are beautifully alternated with a fringing of shrubs, green lawns, and lofty trees.

"Here spread also vast expansions of arable ground in which the different lots exactly resemble garden beds, distinguishable from each other only by the different kinds of vegetation, and exhibiting all its varied hues from the dark green of the maize to the brilliant gold of barley. A perfect neatness and brilliancy is everywhere diffused, without a neglected spot to tarnish the luster or excite a wish in the mind for a higher finish.

"All these objects united present here a collection of beauties to which I know no parallel. When the eye traces this majestic stream, meandering with a singular course through these delightful fields, forcing its way between these mountains, exhibiting itself like a vast canal...when it marks the sprightly towns which rise upon its bank....

"It will be difficult not to say that with these exquisite varieties of beauty and grandeur the relish for landscape is filled, neither a wish for higher perfection, nor an idea of what is remaining in the mind."

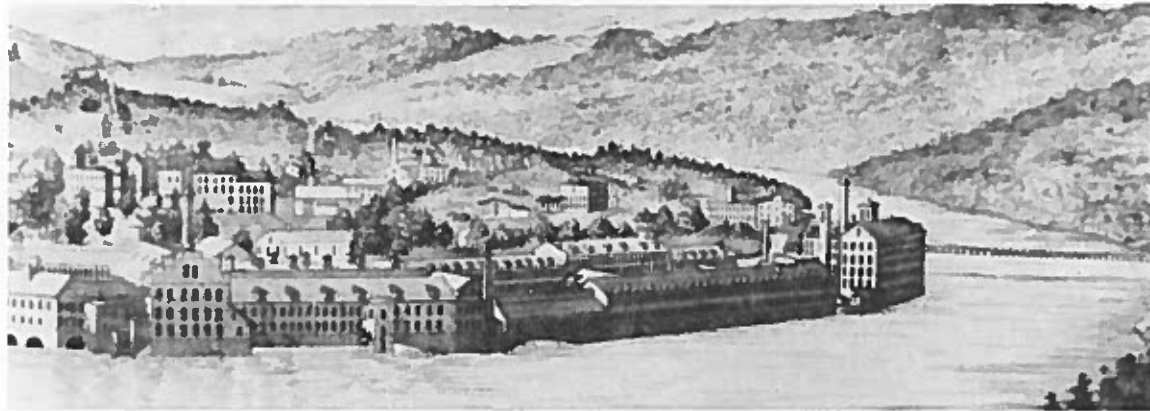
Timothy Dwight
Travels in New York and New England
1821



Thomas Cole, *The Oxbow*, Metropolitan Museum of Art, Gift of Mrs. Russell Sage, 1908

Overview of the Valley

When Yale College President Timothy Dwight visited the Connecticut River Valley early in the 19th century, over 200 years of European settlement had molded many of the scenic and cultural qualities of the landscape that remain so highly valued today. To native and visitor alike, the Valley landscape still represents traditional New England: the River, wooded hills, agricultural fields, tobacco barns, historic mill centers, and quintessential villages. It is a distinctive blend, providing a setting for a prosperous economy, rich culture, and way of life in harmony with the natural resources and cultural roots of the region.



Nineteenth Century Mills Along the Connecticut River

The landscape cherished today is a tapestry woven by its human settlers, whose lives have been molded by the dominant presence of the Connecticut River. Its fertile riverbank soils were a key factor in creating the agricultural economy that continues to thrive. For the Indians and pioneer settlers it was a source of food and transportation, providing a communication link for the influx of new settlers and new ideas. During the first two centuries of pioneer settlement the region developed a largely self-sufficient economy; the surrounding hills were extensively logged and numerous sawmills sprung up along the River and its tributaries to support the region's continued growth.

With significant improvements in water-power technology in the 1820s and 1830s, manufacturing brought growth to the region's cities, and new milltowns developed in tight clusters around factories. Wherever a good head of water could be harnessed, small mills and villages emerged. This dual heritage of agricultural market towns and manufacturing centers is still reflected in the Valley's mosaic of open fields and forests, scattered farmsteads, mill towns, and urban centers.

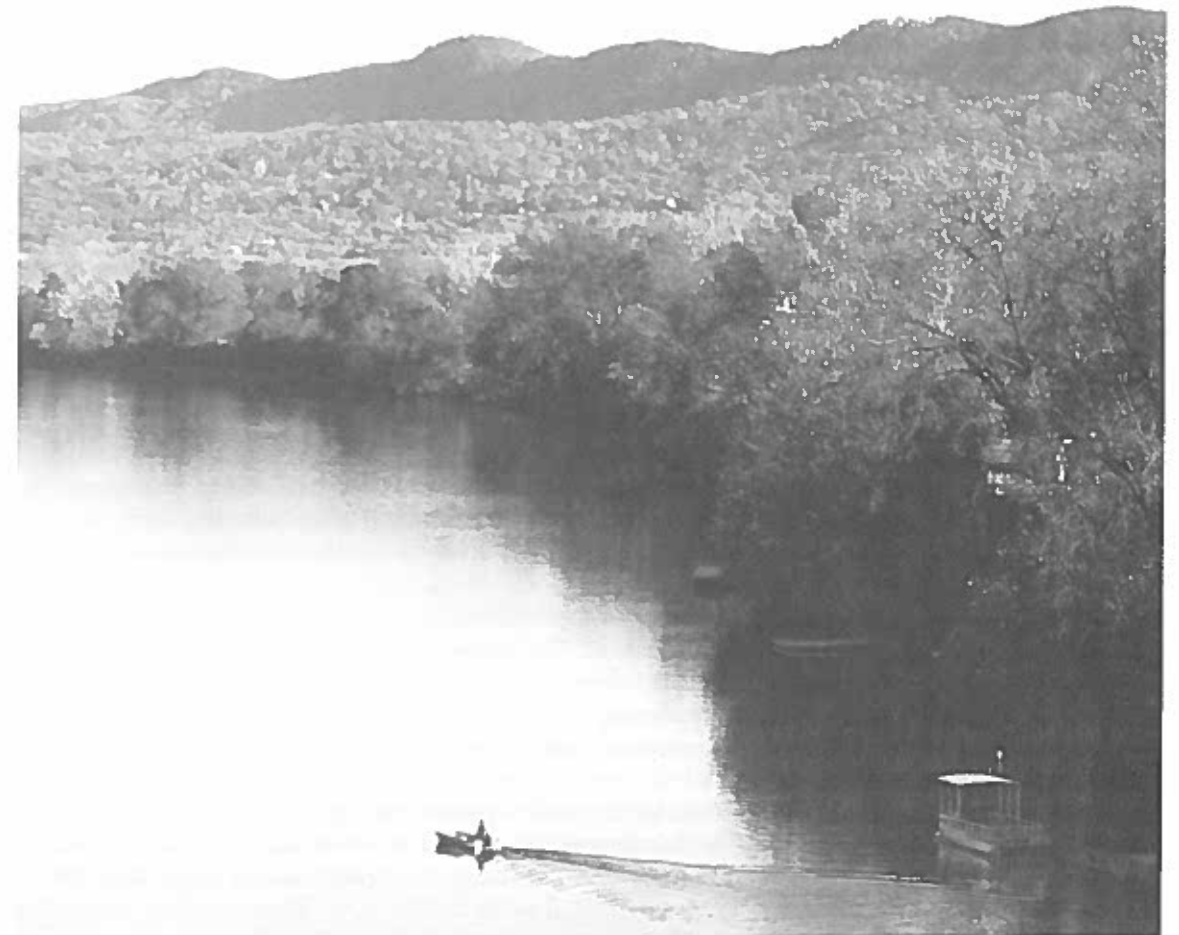
By the late 1940s, the Valley's industrial cities and towns began to decline as much manufacturing moved south and later overseas. The post-war era brought widespread automobile commuting, opening the door for extensive suburbanization, especially in the Valley's southern reaches surrounding Springfield and Holyoke.

While industrialization represented the economic fruit of imagination and innovation, it also marked the beginning of a long period of decline in the River's health and in its perception by area residents. As the population grew and more land was developed, the River lost its great buffering effect, overrun with industrial and human wastes. Ironically, improvements accepted by modern society proved detrimental to the River's natural functioning. Dams blocked salmon and shad migration to spawning grounds upstream; they also trapped silt and sediment that had for centuries nurtured low-lying riverside meadows and fields. Modern plumbing produced sewage, which choked the River with a surplus of nutrients and rendered it unfit for drinking, swimming, or fishing. Industry and agriculture added a variety of harmful chemicals which contributed to the decline in the River's quality.

Despite the River's decline, its value and importance to Valley residents were not lost. In the last two decades, major efforts have largely restored the quality of the Connecticut River and its tributaries, heralding the return of salmon and shad, along with swimmable waters. Programs to revitalize urban centers, reuse old mill buildings, encourage agriculture, and protect open space portend a new and promising chapter in the Valley's continued growth. These efforts have also given a tremendous boost to the region's quality of life. The expansion of the Valley's colleges and universities, as well as financial, service, and "high-technology" industries have brought renewed prosperity, new residents, and a flush of growth and development.

There are other changes, however, that cannot be overlooked: the widening of Interstate-91 north of Hartford, the suburbanization of employment, the in-migration of city dwellers looking for a rural or small town lifestyle, and the expansion of metropolitan employment and housing spheres. Residents and visitors feel the effects: traffic congestion, new development of commercial strips and sprawling subdivisions, increased housing costs, and loss of scenic views or special retreats that citizens had taken for granted as public amenities of the Valley.

Today many of the special features that define the Valley remain, but their future protection is far from assured. Some progress has been made through public-private partnerships among Valley residents, non-profit conservation groups, the business community, and local, regional, and state governments. These efforts must continue to draw on lessons from other regions where a variety of effective tools have been created. Only through citizen involvement in management of conservation and development can the Valley's character continue to be a great asset.



Connecticut River and the Holyoke Range

The Making of the Connecticut River Valley

The beauty of the Connecticut River Valley has long captivated residents and attracted visitors to western Massachusetts: its varied array of natural and cultural features--mountains rising from fertile valley farms, interspersed with historic villages and bustling urban centers--and the River that binds them all together. The Valley's distinctive landscape is a humanized one, the product of centuries of human interaction with the underlying natural resources. An appreciation of this landscape requires an understanding of its natural and cultural origins.

Origins of the Valley

Reading the landscape of the Valley is a detective challenge: the visible landscape offers only clues to the full record of its history. The region's undulating mountains owe their origins to endless collisions of continental plates and the slow but unyielding erosive forces of wind and water. The massive glaciers which blanketed the region more than 15,000 years ago further shaped and defined the Valley. Mile-thick sheets of ice slowly scraped over the land, not once but four times, stripping away soil and grinding down bedrock. The magnitude of this glacial force is hard to imagine. Rubble deposited by the retreating glacier formed an earthen dam across the Valley near modern-day Middletown, Connecticut, effectively blocking further drainage. This natural dam created an enormous lake, today referred to as glacial Lake Hitchcock, that extended north of Hanover, New Hampshire. Geologists calculate that the dam was breached about 10,000 years ago, draining the entire lake.

Evidence of Lake Hitchcock still exists. On the low hills throughout the region, such as Mount Pollux in Amherst, the discerning eye can detect traces of the shoreline created by the constant lapping of water against its slopes. The curious sandy plains or "barrens" in Montague were formed as outwash deposits where rivers emptied into the lake. Most familiar are the Valley's deep productive agricultural soils that owe their richness to the thick silt that settled on the ancient lake bottom. These rich deposits contrast sharply with the thinner, rockier, and poorer soils characteristic of the hilltowns located above the ancient shoreline.

The sinuous course of the River presents its own documentary. Where it still follows its natural path, the River has carved deeply into the silts and clays of the old lake bed, forming terraces above its banks. As the River meandered in wide-swinging loops back and forth across the broad valley floor, it left several ox-bow lakes, representing former channels, another reminder of the River's dominant role in shaping the landscape.

The Humanized Landscape

Since glaciation, thousands of years of human habitation have influenced the ecology of the Valley. For Native Americans the River provided bountiful fish, and the forests and fields abundant game, fruits and nuts. The Indians used fire to clear fields, maintain forest openings, and encourage lush green growth to attract deer and other game. But their staple was agriculture. They cultivated corn, along with beans, squash, and tobacco, moving to new sites once their fields' productivity began to wane.

Native Americans lived in harmony with the region's natural systems, practicing a communal lifestyle in which property ownership was an unknown concept. The Indians cherished the land in a reverent and spiritual way; they were its guardians and it was their provider. Although they used the land intensively, their small numbers did little to damage its long-term stability. Their clearings, however, strongly influenced the early pattern of European settlement in the Valley.

Native Americans' communal land practices were rapidly supplanted by the European settlers when they arrived during the second half of the 17th century. The fertile and most accessible Valley lands were settled within decades of the Pilgrims' arrival in Plymouth. Land purchased or seized from the

Indians was allocated to the settlers in standard parcels, often in reward for military service or as inducements to settle in the area.

Settlement of the Valley proceeded northward along the River, which provided the region's principal transportation link for the next two centuries. For this reason, all of the Valley's larger cities and towns have developed along its banks. Springfield and Hartford were initially established as fur outposts, but the fur trade quickly lost its economic importance as agricultural production increased. While the river bottomlands were settled rapidly, surrounding hilltowns did not begin to grow for another 150 years due to difficulty of travel, conflicts with native tribes, less favorable soils, and shorter growing seasons.

The early settlers' transformation of the Valley destroyed the Native American culture and altered the ecology through large-scale forest clearing, river damming and the introduction of Old-World species of plants and animals. They created, however, a rural agrarian landscape that was functional and highly productive--and that formed the basis for the Valley landscape as it is today.

After decades of manipulation, the landscape that evolved was a patchwork of open agricultural fields, punctuated by an occasional farmstead or village grouping. The distinctive pattern of houses clustered around a green, where farm animals were allowed to graze, followed the English model. This layout initially provided security and easy access to the surrounding fields. The pleasing visual character of these centers is largely the result of the organic way in which they evolved, without arbitrary rules regarding lot size, frontage and setbacks. The stark monotonous uniformity which pervades many contemporary subdivisions and retail developments is absent from the traditional New England village. The village has, nonetheless, a consistency in placement and building style. The standard use of wooden clapboard construction, traditional shapes and roof pitches, and a familiar rhythm of well-proportioned windows are all ingredients. This was accomplished more or less unconsciously, based on historic building practices, available materials, and abundant local examples to copy, adapt and refine. One has only to stroll down the main streets of towns such as Longmeadow, South Hadley, Deerfield, or Northfield to discover this "diverse consistency."

The River provided a natural migration route inland and the Valley's population continued to expand. The surrounding hills were extensively logged and sawmills sprung up along the river and its tributaries. Newcomers also tried their hands at farming. The rigorous hills, although poor for crops, proved valuable for pasture and hay. Significant improvements in water-power technology in the 1820s and 1830s brought manufacturing growth to the region's cities and milltowns. New immigrants often viewed this source of employment as their ticket to a better life; whole families labored in the mills to earn enough money to buy their own farm in the outlying countryside. The Connecticut River Valley produced textiles, along with a mixture of manufactured items such as whips, paper, firearms, and, later, precision tools. Although steam engines eventually supplied the mills with direct motive power, the dams were maintained as a source of hydroelectricity.

By the time of the Civil War, New England agriculture was undergoing major change: the small-scale self-sufficient farms that had been its trademark for two centuries had lost their competitive advantage with innovations in large agricultural machinery and the improved transportation network linking more fertile farms in the Midwest. Although the Valley's productive riverfront farms remained profitable, much of the region's marginal agricultural land was abandoned, its owners lured further west by the promise of rich, level, and stone-free land.

Toward the turn of the century, development patterns were strongly influenced by the extensive system of inter-urban trolleys. This regional transportation network linked all the valley settlements, with spur lines eventually connecting many of the outlying hilltowns. The Bridge of Flowers in Shelburne Falls, for example, is a former trolley bridge across the Deerfield River, now graced by a flower-lined walkway. Residential and later small commercial development located along these mass-transit lines,



Hadley, historic town center

extending the linear settlement patterns which had begun to emerge along the main roads. Still, this pre-automobile era development tended to be relatively concentrated, within walking distance of trolley stops.

By the late 1940s, changing markets, new technology, lack of investment, and foreign competition began to erode the Valley's industrial base. The widespread use of the automobile for commuting and pleasure trips led to the growth of suburban housing in the countryside. Oftentimes farms were cleared to make room for new homes and commercial development to serve them. Others were converted to second homes, or "gentlemen's farms," maintaining their visual presence on the landscape although often removing the land from productive service. In all, over 80,000 acres of the Valley's land was removed from active agricultural production between 1952 and 1972. It was a period of tremendous land-use and economic change bringing innovation and development, but without much knowledge of the environmental or scenic consequences. The last three decades have been a period of transition for the region's urban core of Springfield, Holyoke and Chicopee, from heavy manufacturing to service jobs, light industry, and high technology operations. Since the rash of manufacturing and defense plant closings during the 1960s and early 1970s, these cities have become increasingly diversified and economically resilient. Major initiatives to restore water quality and stabilize the region's agricultural base have contributed to a growing recognition of the Valley's distinctive character.

Why Work to Save the Valley?

Today, the Valley's regional identity is a composite of its landscape, people, institutions, and history. All contribute to its character--and to reasons why protecting the Valley takes on such special significance.

Over the last few years the Valley has experienced a period of rapid economic growth and landscape change, a trend expected to continue for the foreseeable future. While this growth has benefited the Valley in providing jobs, reviving former mill towns, and increasing cultural diversity, the results have not been universally pleasing when translated to the landscape: indiscriminate commercial strips, low-density residential sprawl, and loss of valuable open space. The effects are evident in many ways, but perhaps nowhere more alarmingly than on the rural landscape itself.

* Statistics compiled from aerial photographs show that the quantity of open land converted to development in Hampshire and Franklin Counties nearly tripled between 1951 and 1972 (from 14,102 acres to 41,633 acres); limited follow-up reconnaissance indicates this trend has been continuing.

* House prices have doubled or tripled.

* Hilltowns face development proposals that would double their housing stock and burden town services and schools.

* Daily traffic volume along Route 9 between Amherst and Northampton has increased ten-fold within the last five years.

* Rapid, unplanned growth has produced a random pattern of residential subdivisions and multi-unit dwellings unrelated to municipal systems and utilities, often constructed without consideration of how they relate to the landscape.

This expansion now threatens to overwhelm the sense of place and visual qualities that have evolved for over 300 years. For many area residents, the image and the reality of the Valley have begun to conflict.

Small towns are especially ill-equipped to deal with the challenge of rapid, unplanned growth which jeopardizes town character, natural resources, open space, public services and infrastructure, and the stock of affordable housing. Many of the debates on growth versus preservation have arisen because towns lack professional planning assistance and updated land-use techniques that allow for better management of needed economic development, reasonably priced housing, and transportation improvements. Most towns are governed by zoning by-laws which often unwittingly prescribe development patterns that are inappropriate for their rural areas. Suburban sprawl is spawned by large-lot development requirements and by highway corridors zoned for unlimited commercial development--precisely the pattern mandated by many towns' bylaws. There is a growing consensus among area leaders in both government and private business that rapid unplanned or poorly planned growth, rising house prices, and traffic congestion threaten the region's long-term economic outlook.

These changes are harbingers of other threats to the Valley's fragile character. The importance of the region's natural resources to its economy is especially significant. Aquifers need additional protection to prevent long-term pollution of drinking water supplies. Chief among the potential pollutants are leachates from landfills, septic systems, and road salt storage areas, industrial and toxic household wastes, and certain agricultural chemicals. The town of Whately's experience with well water contamination by the agricultural pesticide aldicarb (Temik[®]) is a significant warning. Surface waters are also highly vulnerable, and continued development along the banks of the Connecticut could create the need for expensive, lengthy sewer extensions should individual septic systems fail.

The riverfront landscape is also easily compromised. The costly clean-up of the River through improved central sewage treatment plants is leading to increased residential development along the predominantly natural corridor north of the Holyoke Range. As the River's edge is cleared for residential development, the view from the water will be dramatically suburbanized. Wetlands and floodplains along the River's borders protect human life and property by absorbing and releasing floodwaters. They are also essential for wildlife habitat. Public access and recreational opportunities are sometimes regarded apprehensively by waterfront owners, who are concerned about the potential for over-use of the River by visitors on motorboats. Increased use of the River for fishing and boating causes its own conflicts, especially between motorized and non-motorized craft.

A major ingredient of the Valley's scenic quality lies in its agricultural heritage. The Valley is the most productive agricultural region in Massachusetts. Fields dotted with tobacco curing sheds are a visual reminder of the shade tobacco that once dominated the region's fields. Despite setbacks over the past

few decades (including asparagus blight and the declining demand for cigar tobacco) the Valley's agricultural base remains relatively intact and remarkably healthy, through strong promotional and research efforts--and the Yankee persistence of its farmers. Today, the fields produce intensively cultivated vegetable crops, hay, and pick-your-own berries. However, increasing competition from outside the region, inappropriate zoning, and escalating land values put the future of many Valley farms in jeopardy. The flat lands so easy to cultivate prove equally amenable to development, and unprotected farmland continues to be subdivided into large houselots. The losses associated with land conversion go beyond actual production to the visual scenery attached to it. From the agricultural landscape and buildings emanate a strong aura of the rural aesthetic--"a sense of roots."

The Valley's urban centers effuse a similar sense of history and pride; Chicopee, Westfield, Holyoke, Turners Falls and others still offer vivid images of the industrial revolution. Although manufacturing has contracted in line with national trends, this change has been largely offset by an upsurge in the service sector, including new jobs in finance, insurance, commerce, and higher education. Through the combined efforts of the public and private sectors, cities like Springfield, Northampton, and Greenfield are again pre-eminent centers of commerce and culture. The growing importance of intangibles--quality of life, recreation, and community character--is increasingly reflected in business location decisions. The region's special character and sense of place plays a significant role in helping to attract quality business to locate and expand here. This points to the importance of maintaining the natural, scenic, and cultural qualities of the Valley, both within and outside urban areas. Accessible natural lands must be preserved as human retreats and ecological refuges in more rural areas. Urban parks can help breathe new life into abandoned factories and mills through creative adaptive re-use. The Massachusetts Department of Environmental Management's urban Heritage State Parks (in Turners Falls, Holyoke, and Springfield) help capitalize on the River's history, binding past with present and increasing the livability of not only individual cities but also the entire Valley.

The 67 cities and towns that compose the Connecticut River Valley form an interdependent system of employment centers and residential communities. As regional employment continues to expand, and commuting along the I-91 corridor becomes easier, the land-use consequences of continued population growth may seriously impinge on the character and visual quality of the region. Responding to such concerns requires local and regional action. A variety of land protection tools have already proven successful in other parts of the country. The Valley's scenic, historic, and cultural resources will need to be treated with the utmost care to prevent it from becoming an amorphous extension of greater metropolitan Hartford and Springfield. If that becomes the Valley's future, its essential attractive force will be lost forever.

Working Toward Livable Solutions

Nurturing the Valley's pride of place requires imaginative thinking and cooperative efforts among many diverse groups--farmers, business leaders, planners, developers--to pass along to future generations a landscape heritage as rich and beautiful as that now enjoyed by Valley residents. Creative strategies which artfully blend conservation and development need to be forged and applied in every town.

The state Department of Environmental Management (DEM) has taken the lead role in this daunting task. Through its various programs DEM is committed to working with municipal, regional, and state offices, and the private sector, to foster greater stewardship of the region's land and water resources. Signaling its commitment, DEM established the Connecticut Valley Action Program in 1984 to develop a coordinated program for conservation and utilization of the riverfront and related land resources in the 19 cities and towns through which the Connecticut flows. The Action Program's coordinating committee represents each community, and has divided the river into four sections based upon prevailing land uses, to help towns identify and address common areas of concern. The southernmost reach, for example, focuses on the Connecticut as an urban river with an emphasis upon water quality



Turf Farm, Deerfield

and recreational opportunities, whereas efforts in less developed sections are directed at shoreline and natural resources protection. The Action Program continues to help towns protect important river-based features and coordinates DEM's land acquisition efforts with the activities of state and local planning and land conservation programs.

The state-wide significance of the Valley's irreplaceable agricultural resources has prompted the Commonwealth to target this region as a key area for investing money in farmland preservation. Through the Agricultural Preservation Restriction (APR) program, operated by the Massachusetts Department of Food and Agriculture (DFA), more than 219 farmers have sold their development rights to the state, ensuring their land will never be built upon. DEM's Action Program has coordinated its efforts with DFA on those parcels near the River.

The DFA and the College of Food and Natural Resources at the University of Massachusetts are working together to discover new ways of increasing the profitability of small-scale family farming. Enterprising farmers have diversified their crops, lessening their reliance on traditional low-value staples such as onions and potatoes, and are experimenting with specialty vegetable production. New markets have been tapped by innovative marketing vehicles such as the Pioneer Valley Growers Association, a cooperative whose computerized pricing network keeps area growers competitive with outside markets. Integrated Pest Management programs have reduced agricultural environmental impacts and increased profitability through lowered pesticide use.

Agricultural land protection has also been aided by the work of the Valley's two regional planning commissions, the Pioneer Valley Planning Commission (Hampden and Hampshire counties) and the Franklin County Regional Planning Commission. Both provide towns with technical and advisory information on a broad range of planning issues. The Pioneer Valley Planning Commission has been studying alternative methods of improving water quality in urban sections of the River and on farmland protection. The Franklin County Regional Planning Commission has also been actively involved in the farmland preservation issue, promoting interest in associated food processing and technology facilities in the county.

Public appreciation of the River has been furthered through 30 years of active work on the part of the Connecticut River Watershed Council, headquartered in Easthampton. The Council has been instrumental in promoting public awareness of the River through educational programs and recreational activities. It has also been active in promoting water quality and in planning issues relating to the conservation and restoration of the region's natural resources, wildlife, and soils.

Open space protection in the Valley has been advanced through land conserving means such as land trusts, open-space zoning, and "limited development" techniques. The active participation of several local land trusts has complemented DEM's acquisition program. The Franklin Land Trust, for example, recently negotiated a development in Ashfield which provides affordable housing, preserves farmland (under APR), and protects the remaining open area as town conservation land. A number of other land trusts, including the Valley Land Fund, the Hilltown Land Trust, and others are also playing an increasingly active role in acquiring critical open space throughout the Valley.

Innovative new tools in town land-use planning have provided another avenue for encouraging land-use patterns which accommodate growth in ways that respect the Valley's small-town character and scenic countryside. The Center for Rural Massachusetts, at the University of Massachusetts, has played an important role in developing practical guidelines for rural landscape protection. Its "Design Manual for Conservation and Development", prepared with support from the Department of Environmental Management, illustrates creative land-use strategies through a series of alternative development scenarios for eight different sites in the Valley, contrasting the results of conventional zoning and innovative planning techniques. Also included in the manual are a number of model bylaws to help towns implement these new approaches to conserving farmland, protecting riverbanks, controlling roadside commercial development, and promoting well-designed signage. The Design Manual will help inform local decision-making processes by graphically illustrating the ultimate consequences of alternative methods, and by providing practical by-law language for town officials to consider.

The Valley's Future

Much of the Valley's agriculture and open space will be in jeopardy in the years ahead unless a sustained partnership develops among local, regional, and state governments working together with the private sector. The issues are complex but manageable with appropriate land-protection tools available to the people of the Valley. A basic assumption is that the Valley can continue to grow and develop economically without substantially altering its special scenic character and quality of life—but only with the concerned involvement of its citizens.

Valley residents, public officials, and business leaders must work together to chart a course for the region. With technical and financial assistance from the University and the Commonwealth, cities and towns can take a more active role in shaping their future. Fortunately, the Valley can benefit from the successes and failures of other regions that have faced similar pressures. Based on this experience, elements of an agenda for the Valley should include:

- * continued implementation of DEM's Connecticut Valley Action Program and other state efforts to protect riverfront lands, provide recreational opportunities, and preserve the Valley's outstanding natural and scenic features. This will require continued funding of land conservation and farmland preservation programs, and cooperation with developers and land trusts.
- * local adaptation and implementation of the model land-use regulations outlined in the "Design Manual for Conservation and Development", which would preserve town character and important resources while accommodating needed growth.
- * a new partnership among citizens, local and state governments, and the business community to build consensus and provide leadership for these and other initiatives.

The Valley is fortunate to still retain much of the rural character and scenic qualities so eloquently described by Timothy Dwight in the 1820s; only through concerted efforts by all residents will it still possess these special features in another 150 years.

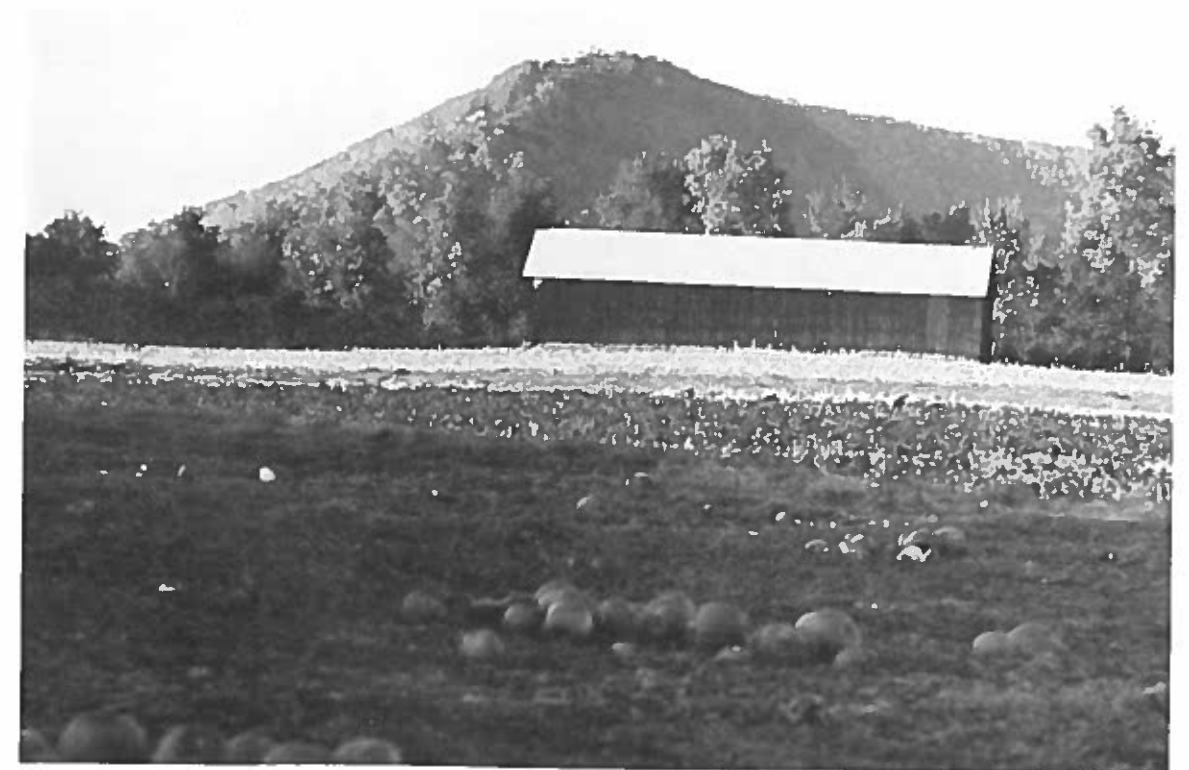
Introducing "Rural Landscape Planning"

Background

Recognition of the vulnerability of farmland to development was one of the factors which motivated the state legislature, at the urging of the Legislative Rural Caucus, to create the Center for Rural Massachusetts in 1985. Located within the College of Food and Natural Resources at the University of Massachusetts at Amherst, the Center conducts applied research useful to state agencies and local governments outside the Commonwealth's metropolitan regions.

In 1986 the Center received a grant from the Massachusetts Department of Environmental Management (DEM) to develop practical guidelines for rural landscape protection. Because these guidelines deal directly with development issues in the countryside, they blend regional planning with landscape architecture, creating a new discipline which we call "Rural Landscape Planning." The landscape of Rural Massachusetts is not a static entity but is rather the product of continuous interaction between man and the land. As John Stilgoe has pointed out in his classic work, *Common Landscape of America*, the word "landscape" means "shaped land, land modified for permanent human occupation," displaying a "fragile equilibrium between natural and human force, (wherein) terrain and vegetation are moulded, not dominated." The idea of extending the regional planning concept to encompass the landscape of a major river valley is not entirely new, but had never before been proposed in New England.

The Center's staff was motivated by a concern that unless effective landscape planning tools were developed and implemented soon, rural Massachusetts would no longer be very rural: it would become conventionally suburban, with only vestiges of the traditional rural landscape -- compact village centers, scattered farms, open fields and wooded hillsides -- lingering on, to remind us of what we had all lost. Protected areas would become "islands" surrounded by a "sea" of sprawling low-density development, similar in nature to the land-use pattern ringing most of the major metropolitan centers throughout the United States.



Mount Sugarloaf from Whately

Working Towards a Practical Solution

Although rural areas contain vast acreages of open land, in many areas it is being converted to other uses at an alarming pace. Like our resources, we exploit and misuse our landscape. As Nan Fairbrother has pointed out in *New Lives, New Landscapes*, "it is not resources we lack, nor even the knowledge, but the vision to use them constructively."

Complete faith in land preservation will not work. Nor will total reliance on an unplanned future, where land-uses work out their own equilibrium, with minimum public intervention. In Fairbrother's words, "New landscapes for new lives must now be consciously achieved, by positive and clear-sighted adaptation of the habitat for our new industrial (and post-industrial) condition."

Clearly, the development design process (for both the public and private sectors) needs to encompass the total landscape of an area. In order to create quality landscapes for our new ways of living, we must deliberately design new settings to suit our new land-uses -- such as residential subdivisions and shopping centers. And that deliberate design is what the Center for Rural Massachusetts set out to achieve in its Connecticut River Valley Landscape Planning Project.

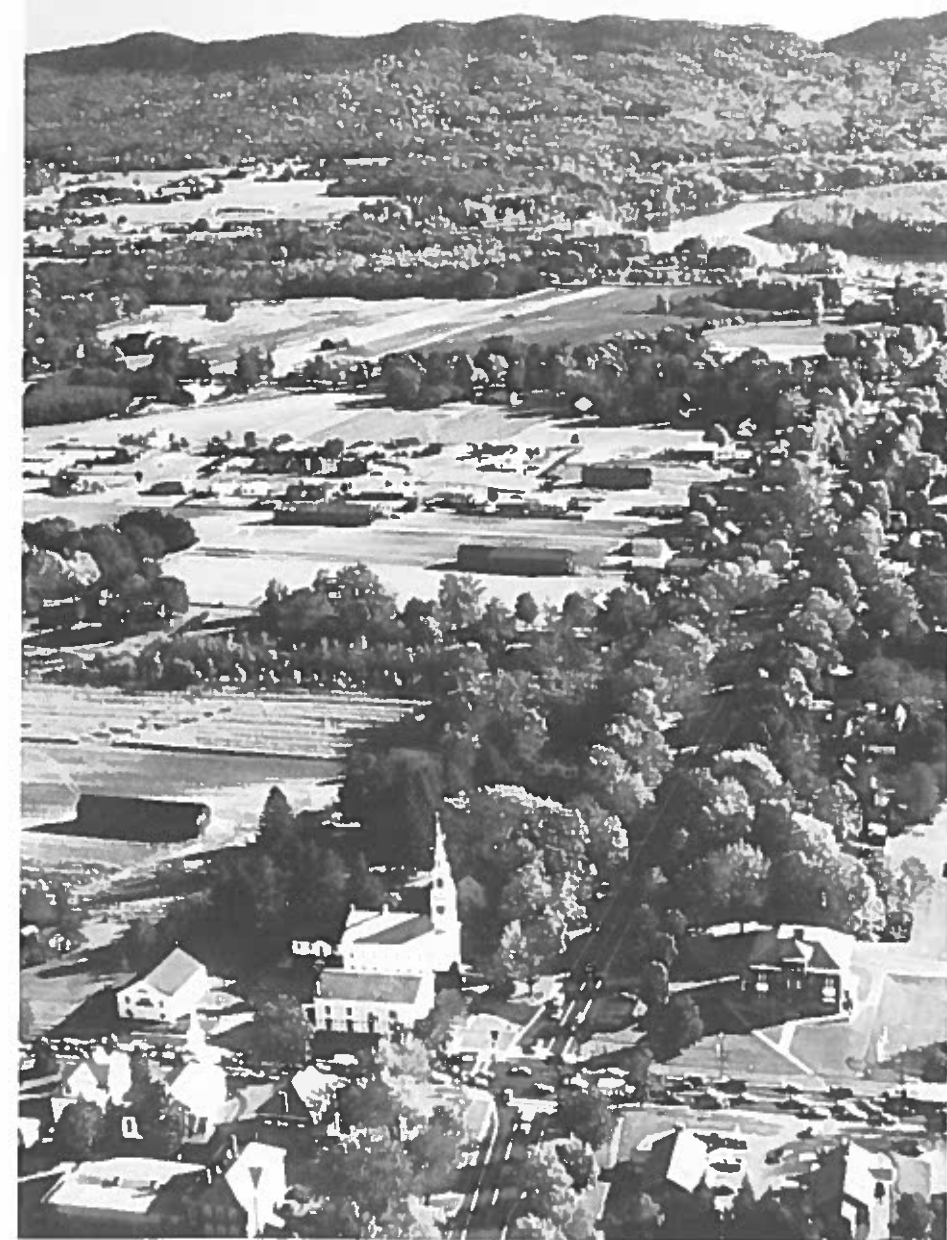
For this design manual, eight sites were selected to portray the different characteristics of a variety of basic landscape types within the Valley (e.g., flat bottomland, riverscapes, lakefront situations, undulating terrain, steep embankments, hilltowns, etc.). For each of the eight sites, three aerial perspectives were sketched and three site plans prepared. These three-dimensional perspectives and two-dimensional plans depict the pre-existing landscape and land-use situations, and contrast them with two alternative development scenarios. Each scenario contains the same overall amount of new development, but they graphically illustrate the enormously different impacts that occur when land is developed conventionally (following standard zoning and subdivision practices), as opposed to being developed imaginatively (using innovative techniques to help conserve the essential rural character of the region). In addition, ground-level perspective sketches are provided for four of the sites, to show the visual contrast as seen from the road by the traveling public.

These highly realistic graphics are accompanied by a text which describes how the two development scenarios typically occur, in terms of the various players and their roles (land-owner, developer, consultants, review boards, etc.).

This manual also contains "Character Plans" for two towns in the Valley, analyzing the landscape elements which make each place special, and offering concrete approaches for the towns to adopt in order to help preserve their rural ambience, while still accommodating inevitable growth in a responsible manner. A detailed Appendix includes model by-laws based on those recommended for the two towns, addressing issues such as roadside commercial development signage, and open space design standards for residential subdivisions. For example, the ideas of "commercial nodes" and "maximum setback from the road" are proposed as alternatives to highway "strip" development. These principles would concentrate new shops and offices at logical points along rural highways, such as intersections, and would prevent the emergence of long, linear retail corridors which not only suburbanize the rural landscape, but also cause traffic congestion through a proliferation of entrances and exits. By requiring new commercial structures to be set back no more than, say, 25 feet from the roadway, traditional street/building relationships can be maintained. Parking and building entrances can be located to the side and rear, offering a greater opportunity to screen these large expanses of asphalt, and giving merchants two locations for signs and display windows (facing the road, and facing the parking area). The relatively compact area between the buildings and the road could then be landscaped with native trees, indigenous shrubs, and wildflowers, enabling the new development to capture the "spirit of the place" through carefully selected plant materials which reflect the natural beauty of the region (as opposed to the conventional "junipers and bark mulch" treatments ubiquitous in suburbia).

In a similar fashion, standard zoning and subdivision practices are modified in critical ways to achieve more harmonious residential development design. It is ironic that the traditionally tightly-knit village pattern so typical of rural New England is illegal to reproduce or emulate in many, if not most, rural Massachusetts communities today. Developers are required to set each house on its own separate one or two-acre houselot; more creative layouts involving more flexible siting (such as "cluster" or "open space subdivisions") are often prohibited by well-intentioned but misguided by-laws. Such regulations inadvertently destroy rural character at a rapid pace.

In their place, we are recommending by-law amendments which would require all new developments proposed on open fields or pastures to be laid out so that no more than 50% of the farmland is consumed by streets and lots. Lots would be reduced in size by (typically) 50%, and the resultant open space would be permanently protected by conservation restrictions for future agricultural use. Buildings would either be located in a woodland fringe at the edge of the fields, or screened from the



Aerial View of Hadley

fields by a newly planted shelterbelt of trees. Although individual septic systems could be built for each house, joint systems shared by several houses would become possible, allowing siting on the most suitable soils in the tract, and at the greatest distance from any wells.

This pattern of down-sized lots and preserved open space offers distinct economic advantages to all parties. Developers can reduce the costs of building roads (and, if applicable, water and sewer systems). Local governments save on snowplowing and on periodic road re-surfacing. And home-buyers could potentially pay slightly less because of these somewhat lower costs.

Everyone seems to benefit when such creative land development strategies are followed. Farmers who view their land as their "pension" no longer have to destroy their farms in order to retire with a guaranteed income, as their equity is not diminished. Town governments do not have to raise large sums (or even small sums) to acquire land or development rights, and are not faced with the administrative complexities posed by TDR (transfer of development rights) by-laws. Developers are not placed under any unreasonable constraints, and realtors gain a special marketing tool, in that the views from the new houses will be guaranteed by the conservation easements which protect the open fields from future development.

This approach has been specifically designed for implementation in small towns, where local officials and residents are looking for land conservation options that involve little public expenditure, are easy to administer, allow full equity for rural landowners, and are not unfair to developers.

Essentially, the broad choice in future residential development patterns is between a creative extension of the traditional rural village concept, and repetition of conventional suburban subdivision practices, wherein 100% of the tract is covered by streets, houses, front yards, back yards, and side yards. The former enables a large proportion of new homes to be sited so as to command uninterrupted views



Aerial View of Connecticut Valley Farmland



Connecticut Valley Farmstead

across long, open fields or pastures, permanently protected from future development. The latter option almost guarantees that the view from one's picture window will ultimately be, as Christopher Alexander has observed, "of the other man's picture window."

The illustrations and text should provide very useful tools for both planners and developers because they show not only what conventional zoning will produce, but also the outcome of practical alternatives. Confrontational situations between town officials, developers, and conservationists can be averted by a sensibly balanced approach which, in Robert Lemire's phrase, "saves what needs to be saved, and builds what needs to be built," as exemplified in our model Farmland/Open Space Conservation and Development By-law.

When a subdivision, shopping center, or other large scale development is proposed in a rural setting, residents and town officials often have difficulty convincingly describing just what is at stake. Fortunately or unfortunately, the quality of a landscape is not easily measured in dollars and cents. Lacking a direct market value, however, a landscape might wrongly be assumed to have no value. This is a very real dilemma in a society which knows the value of very few intangibles, such as the rural landscape.

The intrinsically scenic areas identified in DEM's 1982 Massachusetts Landscape Inventory are places where "man and nature have struck a careful balance, where human activity has complemented rather than destroyed the human environment." Application of the innovative techniques described and illustrated in the Manual will help the next generation of development to be skillfully fitted into the countryside, much in the same way that Western Europeans have succeeded in doing for centuries. Residents of the Connecticut River Valley live in an evolving landscape. In our town-based democratic society, it will be up to local voters to decide just how the landscape of their region should change, and how inevitable development should occur. The choice will be theirs, but instruments such as the Conservation and Development Manual will help to inform the local decision-making processes by graphically illustrating the ultimate consequences of alternative paths. Disseminating this information and working with town boards and communities will be the next task, to help ensure that necessary discussion occurs and that landscape planning choices are made consciously rather than by default.

Site A: Parsons' Mills

1) Existing Conditions:

Landform: Alluvial Plain
Landuse: Small, clustered New England village
Landcover: Fields, Houses, Lake, Roads
Utilities: Town Water, No Town Sewer
Zoning: 1 Acre Minimum Lot Size, 100 ft. Road Frontage

- * Houses and community buildings grouped along main road.
- * Farmland extends out behind houses to the banks of the Connecticut River.
- * Quiet community currently facing rising development pressures.

Located on a high alluvial terrace at the intersection of a stream and the Connecticut River, the site of the small village of Parsons' Mills has seen human habitation for over 6,000 years. A favorite encampment of the Pocumtuck Indians, the area is in close proximity to the water, while being elevated above spring flood levels. Early European settlers arrived during the mid-17th century, attracted by the rich soils and the potential for harnessing water power. A dam and a grist mill were built at a waterfall on the stream by Ezekiel Parsons, creating the present millpond to the north of the village. The mill was also located on the main road paralleling the Connecticut River. A small settlement soon grew up, including a church, a school, several small businesses and a handful of farmsteads with direct access to the fertile land that surrounds the village.



Deerfield



Whately

The form of Parsons' Mills is typical of small New England villages of the upper Connecticut Valley. Centered on the town hall, church and school, the village radiates out along the main street, a lightly-travelled state highway, and a secondary road heading to the southeast. The houses are typically located on odd, irregularly shaped 10,000 to 20,000 square foot lots with frontage on the principal streets of the village. Setbacks and house orientation vary somewhat but maintain an overall consistency which gives the village its unique form and historic visual character.

Consistency of form is created in Parsons' Mills through its architecture, the relatively close relationship of buildings to roadways and the village's response to the constraints imposed by topography and landscape features. This consistency was a result of building traditions, available materials, inability to overcome natural obstacles and the practical need for buildings to be located near roads and in close proximity to each other.

Within this overall consistency, a humanizing variety is created through minor variations in building location, orientation, size, form and setback from the street. These variations are a result of the gradual, organic way in which the village evolved over centuries, a result of the efforts of hundreds of individual builders working within the widely accepted social, aesthetic and physical constraints imposed by life during the 18th and 19th centuries.

Most of the homes in Parson's Mills were built by farmers who tilled the fields extending directly behind the houses. Many of them include farm-related outbuildings or attached barns. While the village once contained over twenty farm properties, a single large farm (Parcel A) now tills all the surrounding land either under direct ownership or through lease agreement.

2) Conventional Development Scenario

- * Large lot frontage and subdivision development.
- * Densities and setbacks of new housing unrelated to existing historic patterns
- * Housing located in the middle of farm fields.
- * Unregulated parking lots destroy village character.
- * Lack of site planning or design controls on new commercial development.
- * Houses located adjacent to water bodies cause visual and environmental damage to banks.
- * Sprawling pattern of new development alien to village's historic settlement pattern.

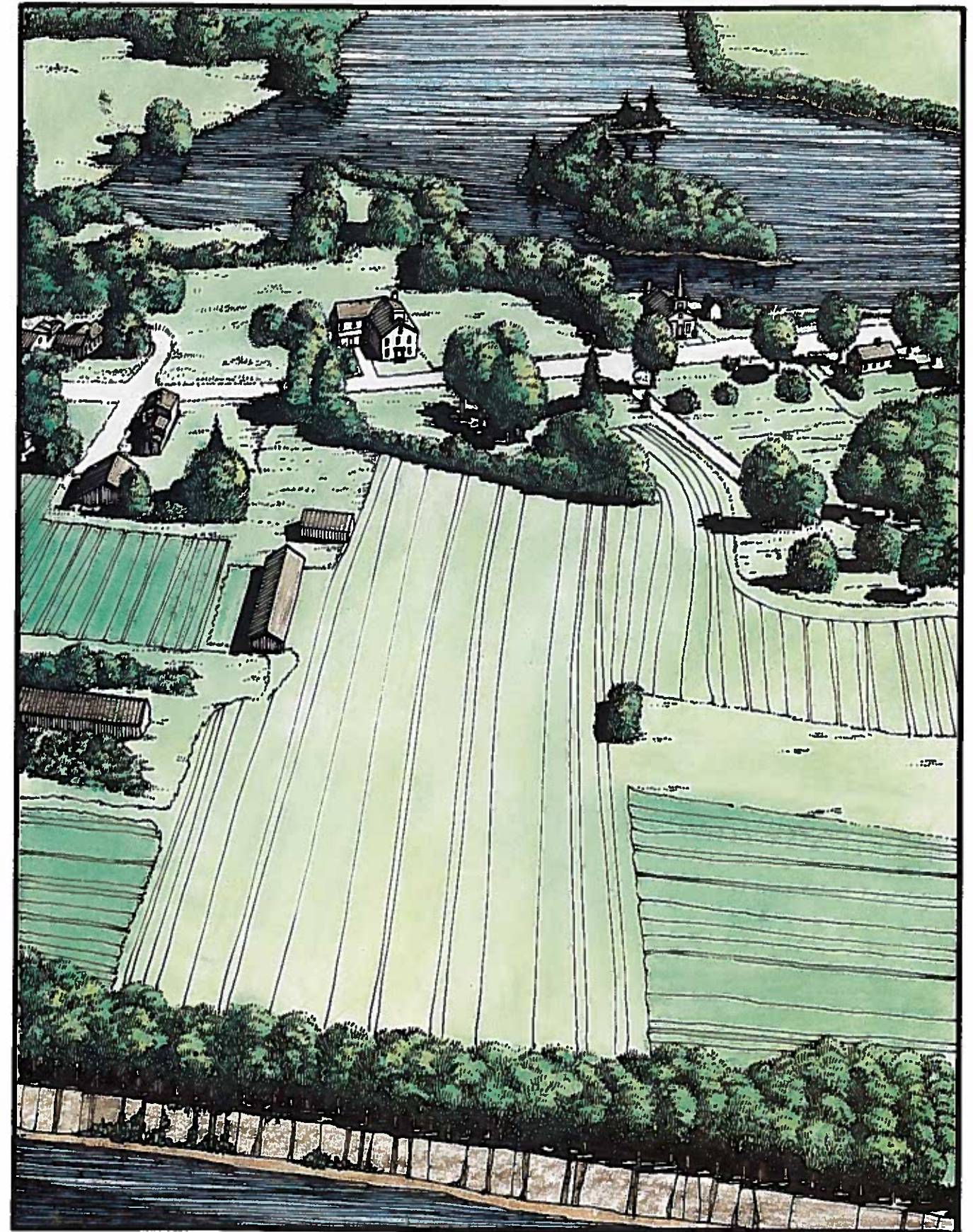
The residents of Parsons' Mills erroneously believed that their existing zoning bylaws and subdivision regulations would protect the character and environment of their community from new development. Instead, to their dismay, they witnessed a massive transformation of character from rural to suburban over the relatively brief span of twenty years. This is how it happened:

Warren Sibley, owner of the parcel A farm, sold road frontage lots over a ten year period to raise money to supplement his modest farm income. He sold two acres to a local developer who built a convenience store at the corner of Main Street and River Road. He also sold several 1 1/2 acre lots in his fields to the south of town to buyers who built large homes overlooking the river. After selling some of his best land and cutting off access to the river from his remaining property, Sibley's farm failed, in spite of the infusion of cash from lot sales. He sold his last acreage to a developer, who built a seven-lot subdivision in the center of the parcel. The town purchased the remaining land to the west for the construction of a new sewage treatment plant, located in full view of the village, and in the middle of Sibley's former corn field.

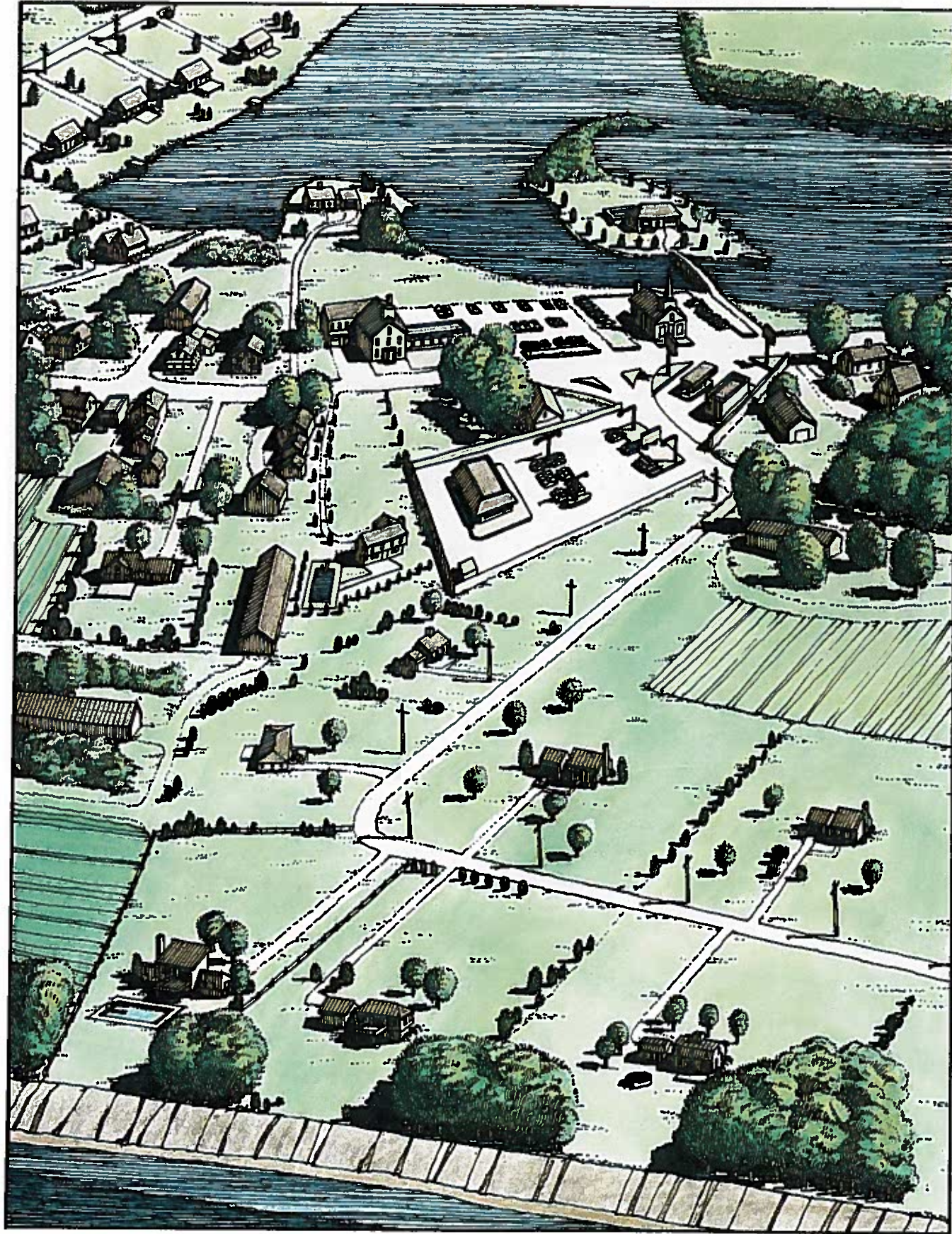
Parcel B, owned by farmer Stanley Pazinski, was sold to a local developer who planned a 14-lot subdivision on the property. The one-acre lots had a minimum of 100 ft. frontage on a 36 ft.-wide subdivision road laid out through the middle of Pazinski's former pasture. The plan met the town's subdivision regulations and zoning by-laws in every respect, but nevertheless destroyed the farmland, visual character and environmental quality of the riverbank.

Parcel C was owned by Mildred Parsons, an elderly widow whose husband Robert, great grand-son of the town's founder, had farmed the property for more than four decades until his death in 1972. Mildred didn't want to see the land developed, but financial need and relocation to a nursing home forced her to dispose of the property. She was finally forced to sell the land to a developer who planned a 16-lot subdivision accessed by two proposed cul-de-sac roads in the middle of the fields on the property. A parcel zoned commercial with frontage on Main Street was sold to a chain of convenience food stores which planned to build a new outlet on the property.

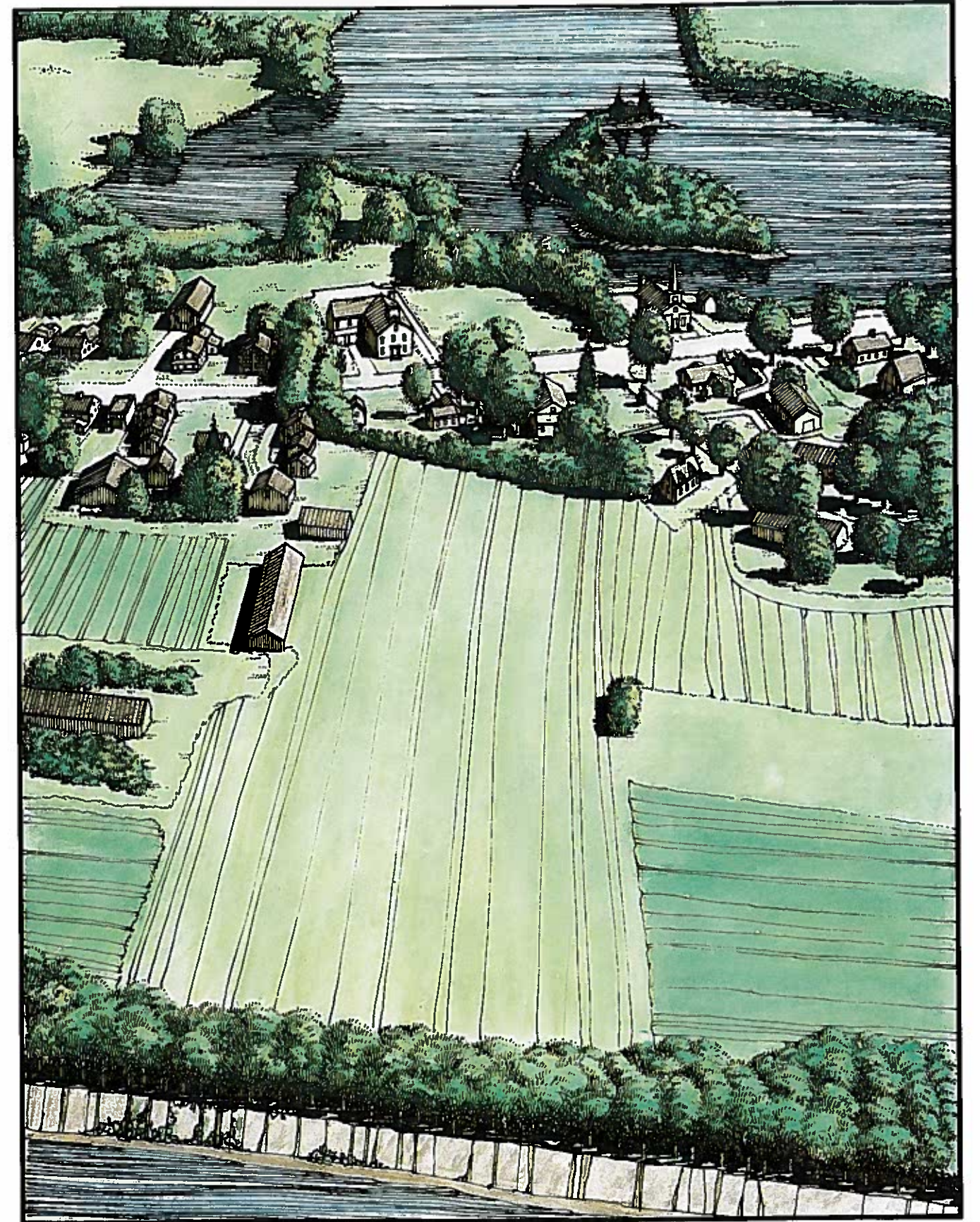
Adding a final coup de grace to the village, the state highway department widened and straightened Main Street through the center of town, pulling down three historic buildings and creating a major intersection at the junction of Main and River Streets. Attracted by the increased traffic on the new roadway, several roadside commercial enterprises were built along the new, "improved" main street. Since the town lacked a comprehensive sign ordinance or adequate controls on parking lot layout and lighting, the business development drastically altered the character of the village. New parking lots for the church and school destroyed the open spaces around these buildings. Old houses were torn down to be replaced by a convenience store and a hardware outlet. The new commercial buildings did not relate to the architectural character of the town and were surrounded by unbroken expanses of asphalt parking.



Aerial View of Site A Before Development



Aerial View of Site A After Conventional Development



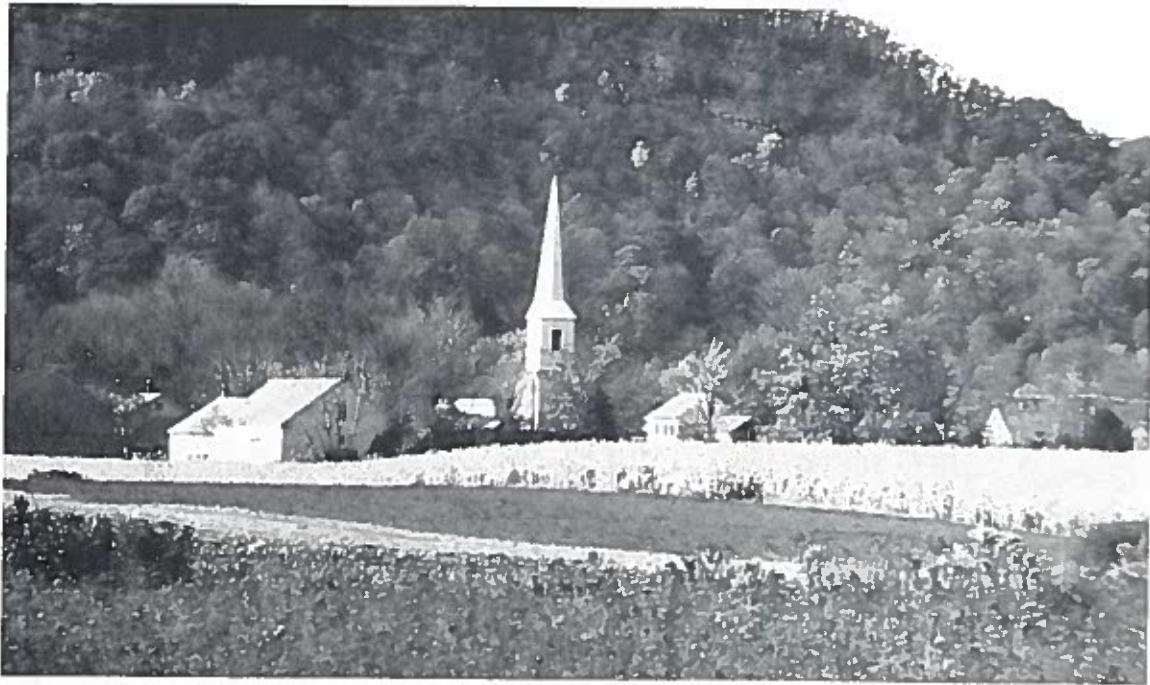
Aerial View of Site A After Creative Development

3) Creative Development Scenario

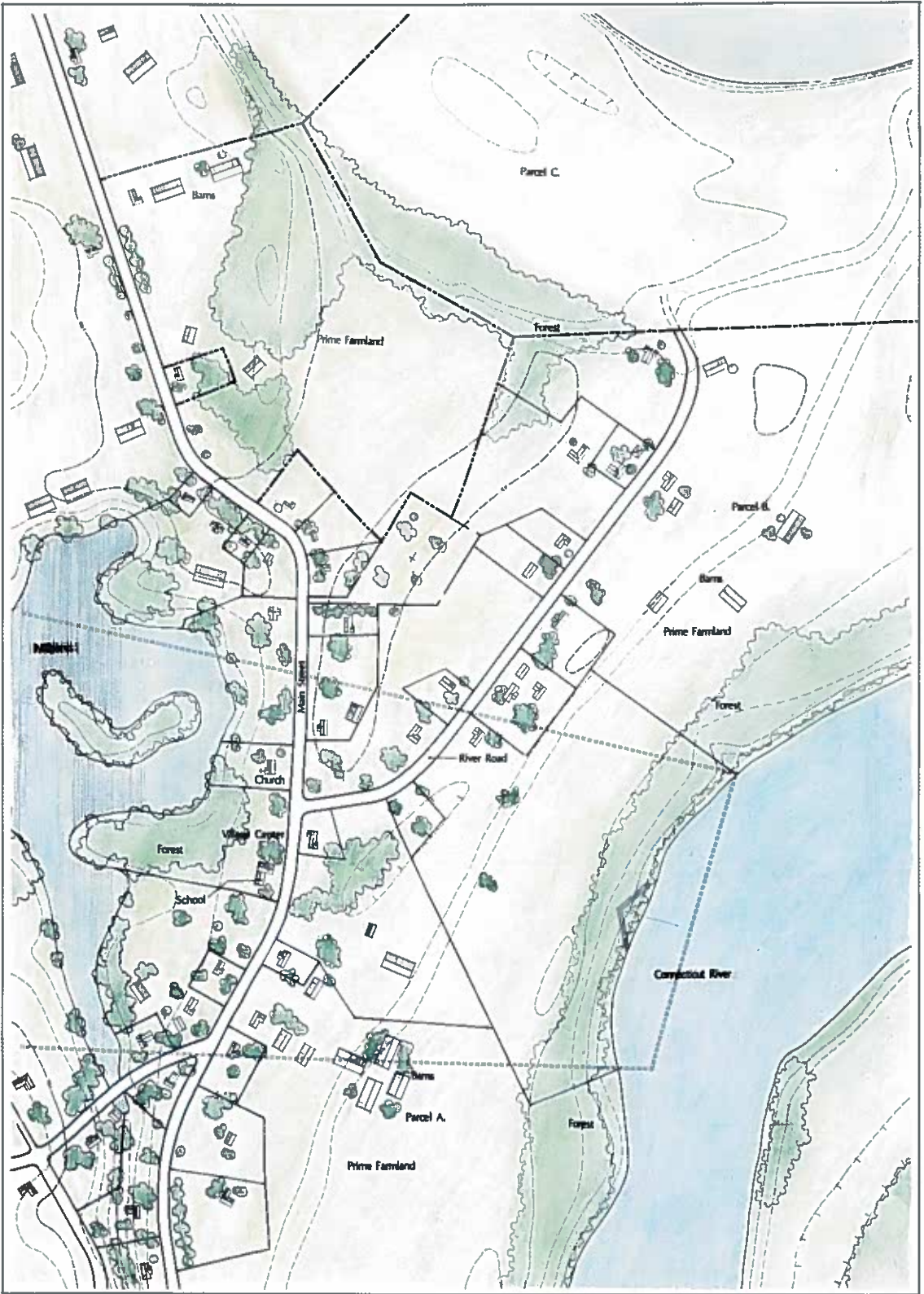
- * New development reflects existing settlement pattern and architecture of village.
- * Zoning modified to allow lot sizes and setbacks similar to existing village.
- * Architecture of new commercial development compatible with village.
- * Parking lots screened and located behind or at the side of commercial and institutional buildings.
- * Lighting controls to prevent over-illumination, glare.
- * Farmland and open space surrounding village preserved by clustering development at edges.
- * Development setback from lake and river.

The residents of the village, realizing that their current 1 acre, 100 ft. frontage zoning was a blueprint for the total transformation of the historic character and environment of their town, voted at Town Meeting to amend their zoning by-laws. First, they enacted a Farmland/Open Space Conservation and Development by-law requiring that any future subdivision involving open fields or pastures be designed so that all theouselots and new streets would consume no more than 50% of the farmland in the parcel. This allowed development to continue at the same overall densities allowed under the previous by-law, but required that new lots be grouped in the woods or at the edge of the farmland. Several lots could be as small as 1/4 acre, consistent with traditional village lots dating from the period during which the village had historically evolved, thereby allowing 75% of the land to be kept in agriculture. The by-law also included a "Site Plan Review" provision to allow the Planning Board to review and, if necessary, suggest modifications to subdivision plans submitted by the developer. This would allow the board to ensure that a proposed subdivision was laid out in a way that best preserved the agricultural, environmental and scenic portions of the property.

Secondly, the voters created a village district in the center of their town. Existing frontage and setback requirements were modified within this district to encourage new houses to be located closer to the street and on narrower, deeper lots in a manner similar to the historic pattern of the existing older houses. A site plan review provision was also incorporated in the village district, allowing the planning board to work with subdividers of land to ensure that new lot patterns blend in with the existing fabric of the village, and to ensure that new buildings would be sympathetic to the traditional architecture of the town.



Sunderland



Connecticut Valley Design Guidelines

A EXISTING CONDITIONS

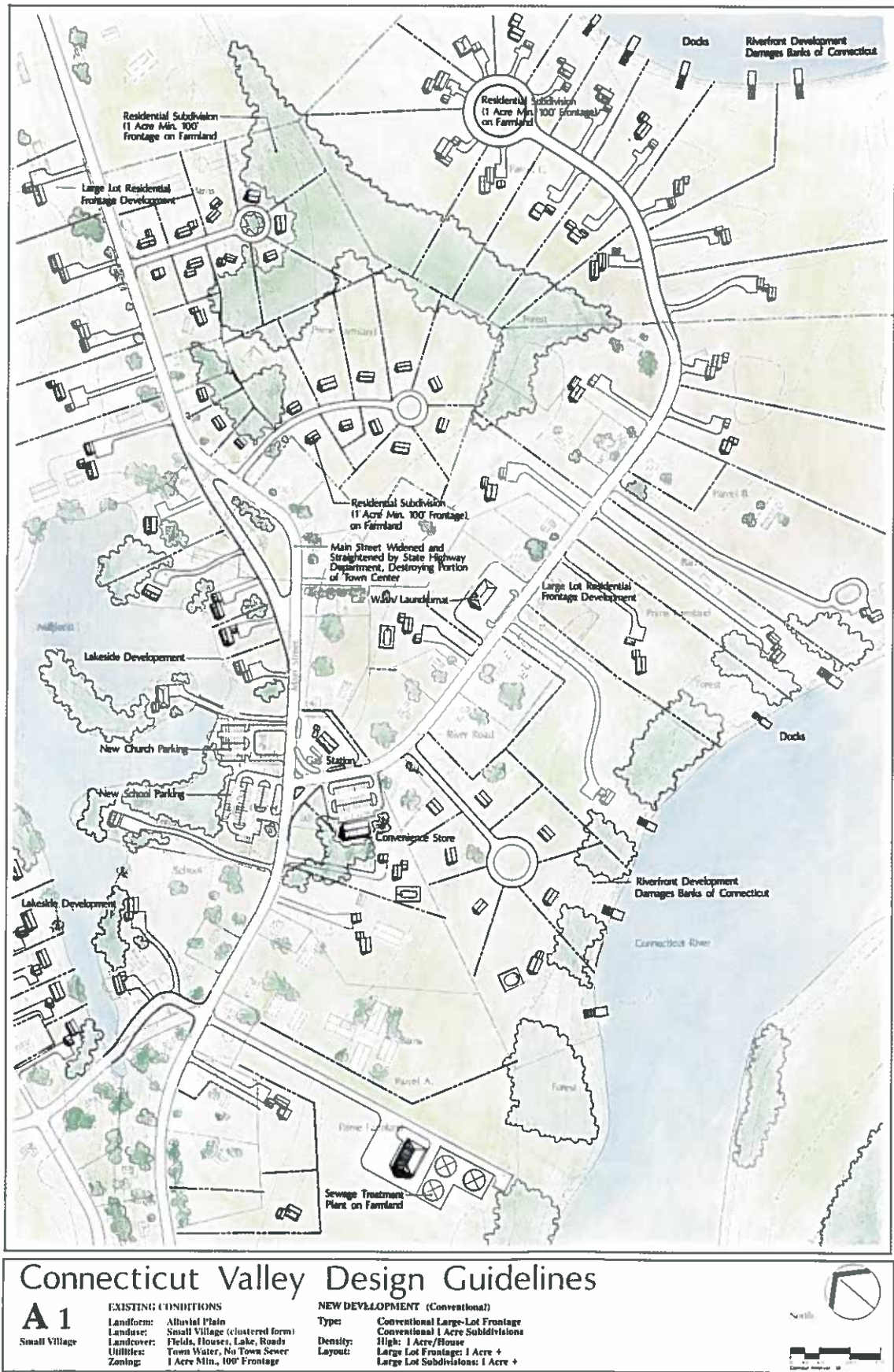
Landform:	Alluvial Plain
Landuse:	Small Village (clustered form)
Landcover:	Fields, Houses, Lake, Roads
Utilities:	Town Water, No Town Sewer
Zoning:	1 Acre Min., 100' Frontage

Small Village

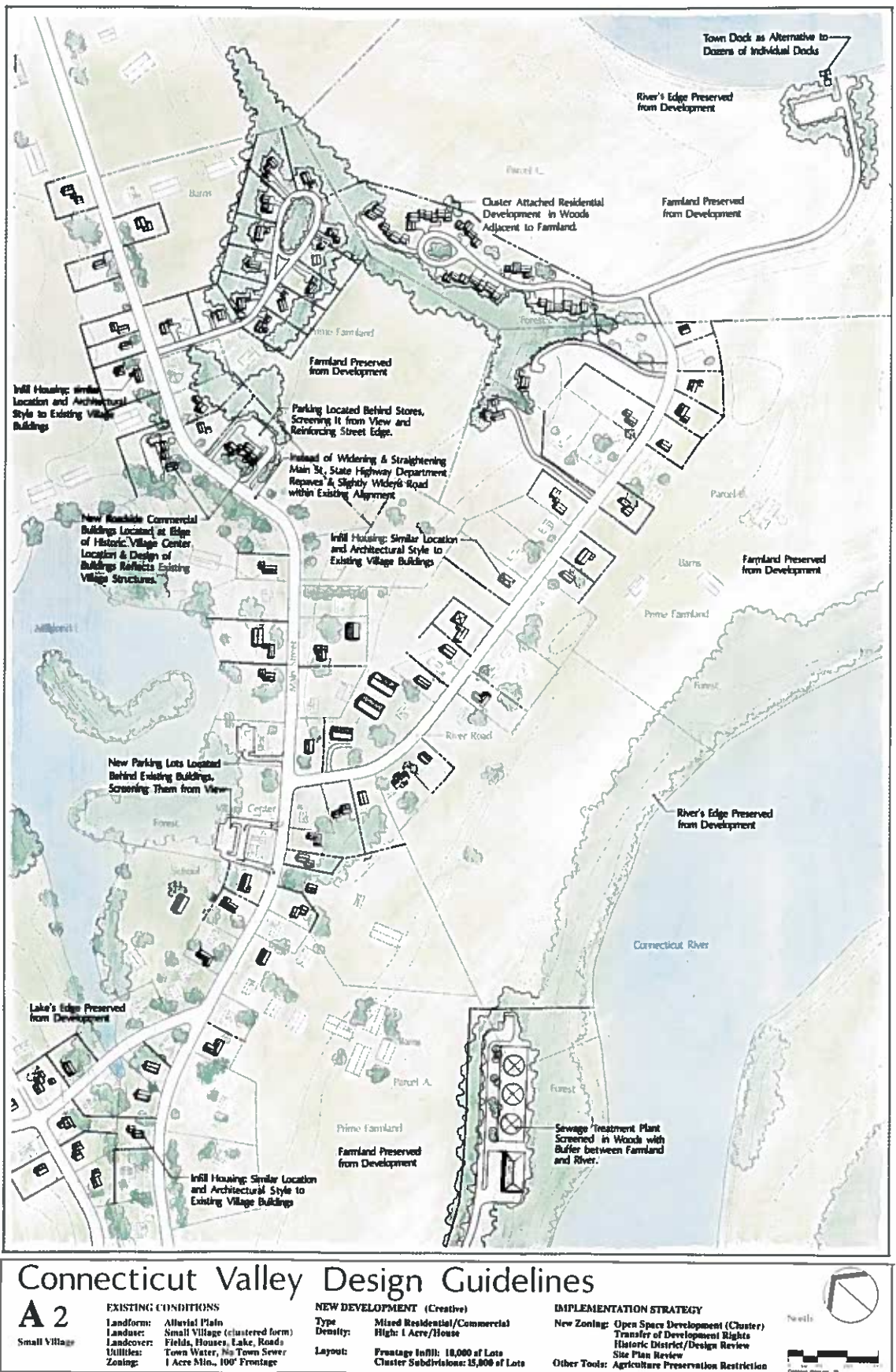
North

Scale: 0 10 20 30 40 Feet

Plan of Site A Before Development



Plan of Site A After Conventional Development



Plan of Site A After Creative Development

Site B: Rogaleski Farm

1) Existing Conditions

Landform:	Alluvial Plain
Landuse:	Cropland, State Highway
Landcover:	Field, Forest
Utilities:	Town Sewer, Water Available
Zoning:	Highway Commercial/Large Lot Residential

- * Flat, alluvial, productive farmland, formerly shade tobacco, now diverse vegetable and grain crops.
- * Rural state highway, sparsely developed, open fields alternating with woodlots.
- * Second-growth forests on less productive land.
- * Farmsteads containing residences, barns, out-buildings and shade trees located adjacent to highway.
- * Dramatic views from highway across farmland to distant hills and river.
- * Heavy residential & roadside commercial development pressure, farming economically marginal.

This site is typical of the fertile farmland found adjacent to the Connecticut River. The flat, highly productive farmland consists of silty loams deposited 10,000 years ago by glacial Lake Hitchcock, a body of water that once covered the entire Connecticut River Valley in Massachusetts. For millennia, silts and clays swept into this lake by cascading glacial torrents built up layer upon layer of rich deposits that have since formed some of the most productive agricultural soils in the country.



Sunderland from Mount Sugarloaf



Deerfield

After about three thousand years, the dam that held back the waters of the lake burst and the area was drained. The river cut a meandering channel through the thick, flat soils of the valley. Soon after the lake waters drained away, Native Americans began hunting the game that abounded in the valley. They fished in the river and farmed the meadows which they created in the valley by burning the forest.

This land was among the earliest sites in the northern half of the valley to be settled by the Europeans. They began tilling the fields cleared by the Native Americans in the middle of the 17th century, and had soon cleared almost all the forests in the area. Arriving by boat, the early settlers soon created a roadway which later grew into the state highway that bisects this site. Originally supporting a variety of produce, the fields were dedicated almost exclusively to shade tobacco by the late 19th Century. The rectangular barns that still dot the site were built to dry and store tobacco leaves. Over the past fifty years, the less productive land grew back to the forests that now cover approximately a third of the site. Faced with declining commodity prices and sharply rising land values, many farmers are under great pressure to sell their property for development.

Parcel A is a 180-acre produce farm owned by 65-year-old Walter Rogaleski who has farmed the land all his life. His father, Tadeuz, bought the place in 1938 with the savings from twenty-three years of labor in the textile mills of Holyoke. Though the farm's annual crop of sweet corn, cucumbers, cabbage and onions results in a modest profit for Walter, he is reaching retirement age and his only son is a successful Hartford insurance executive who is not interested in managing the family farm. Walter would hate to see the land developed, but he cannot afford to donate it for conservation.

2) Conventional Development Scenario

- * Large lot (1 acre, 100 ft. frontage) residential development along existing road frontage.
- * Large lot (1 acre, 100 ft. frontage) residential subdivision of farmland on new subdivision roads.
- * Excessively wide roads (30 ft. paved width), overhead utilities.
- * Strip commercial frontage development along existing state highway.
- * Large illuminated signs, parking lots, roadside clutter along state highway.
- * Total destruction of farmland, rural character and visual quality.

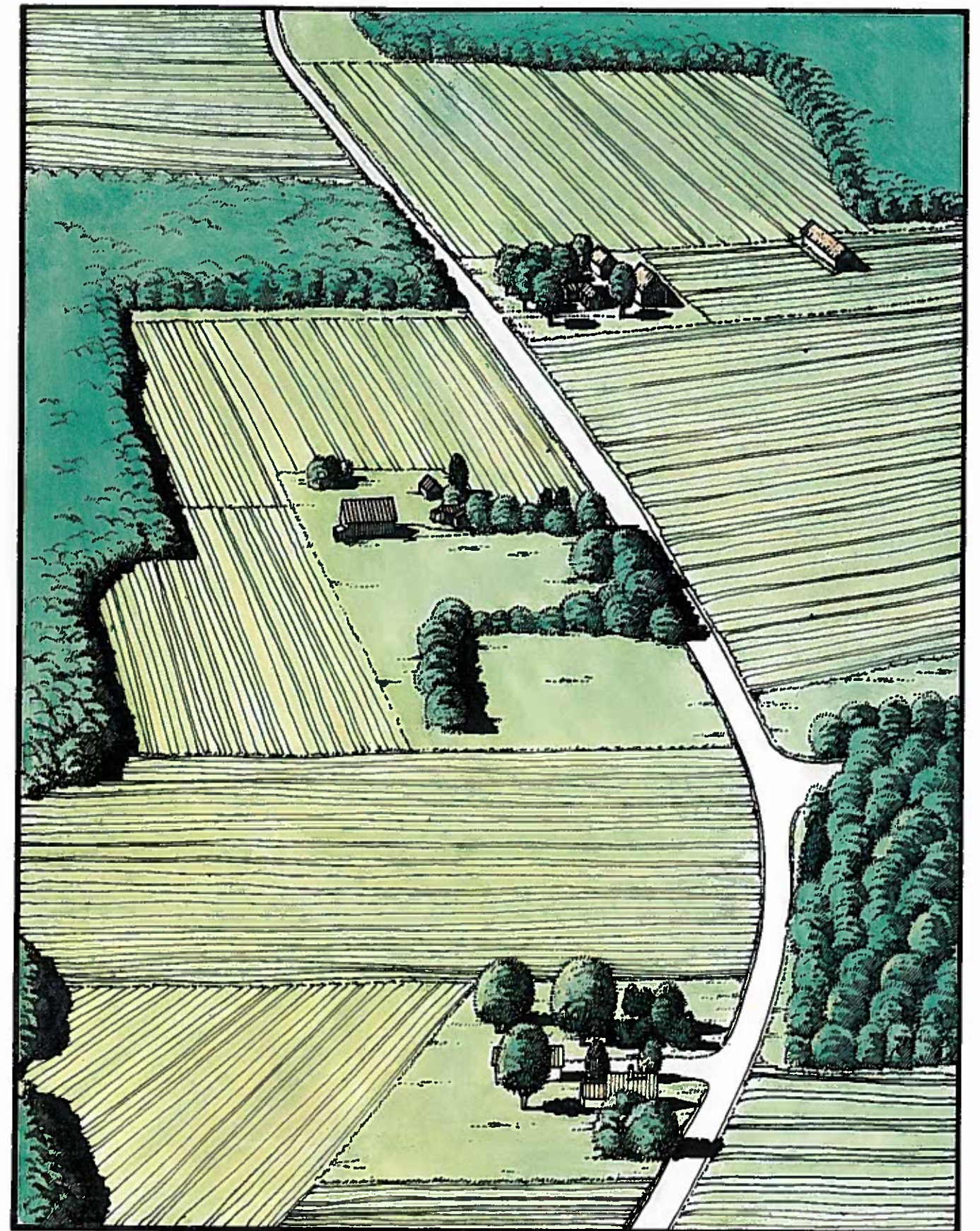
One day Walter was complaining about his predicament to Bud Hampers, a friend who dabbles in real estate development. Bud offered Walter \$1.25 million for the property, an offer he couldn't refuse. Rather than watch the land he had farmed all his life be carved up for house lots, Walter planned to retire with his family to Florida and never come back.

Bud Hampers hired a responsible local engineer who carefully drew up a development plan based on the town's zoning bylaws. Since the land within 400 feet of the state highway was zoned for commercial usage, he subdivided this frontage into two to four acre lots for sale as convenience stores, auto repair shops, laundromats, car washes, fast-food restaurants and other roadside commercial uses. Most town residents were dismayed to learn that their scenic country road was to become a commercial strip, but they were resigned to the fact that this sort of development was inevitable, and felt that it was certainly Walter's right to convert his land equity into retirement dollars. The plan drawn up by Walter's engineer was prepared in complete accordance with the town's zoning by-laws.

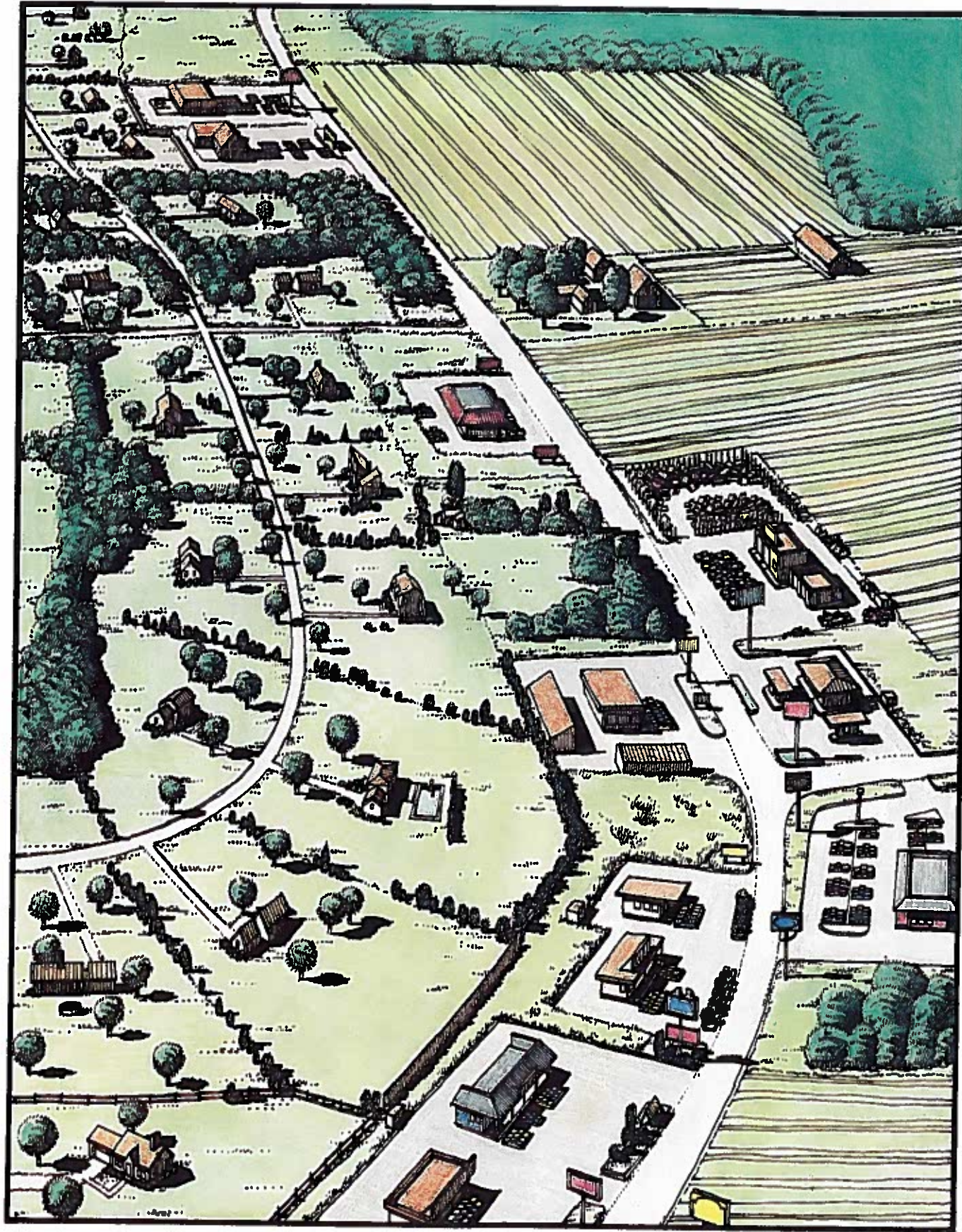
Behind the frontage commercial lots along the state highway, the engineer laid out a 65-lot single family subdivision. Each lot exceeded the minimum 1 acre, 100 foot frontage required under the town's zoning by-laws. The 9,000 ft. subdivision road was designed to the 30 foot width specified in the subdivision regulations. In all respects, the plan followed the letter and spirit of the town's zoning by-laws and subdivision regulations. It also ended the possibility of any future agricultural uses on any part of the farm, permanently altered the rural character of the area, blocked a beautiful view of the river and distant mountains, and destroyed the Indian village archaeological site.



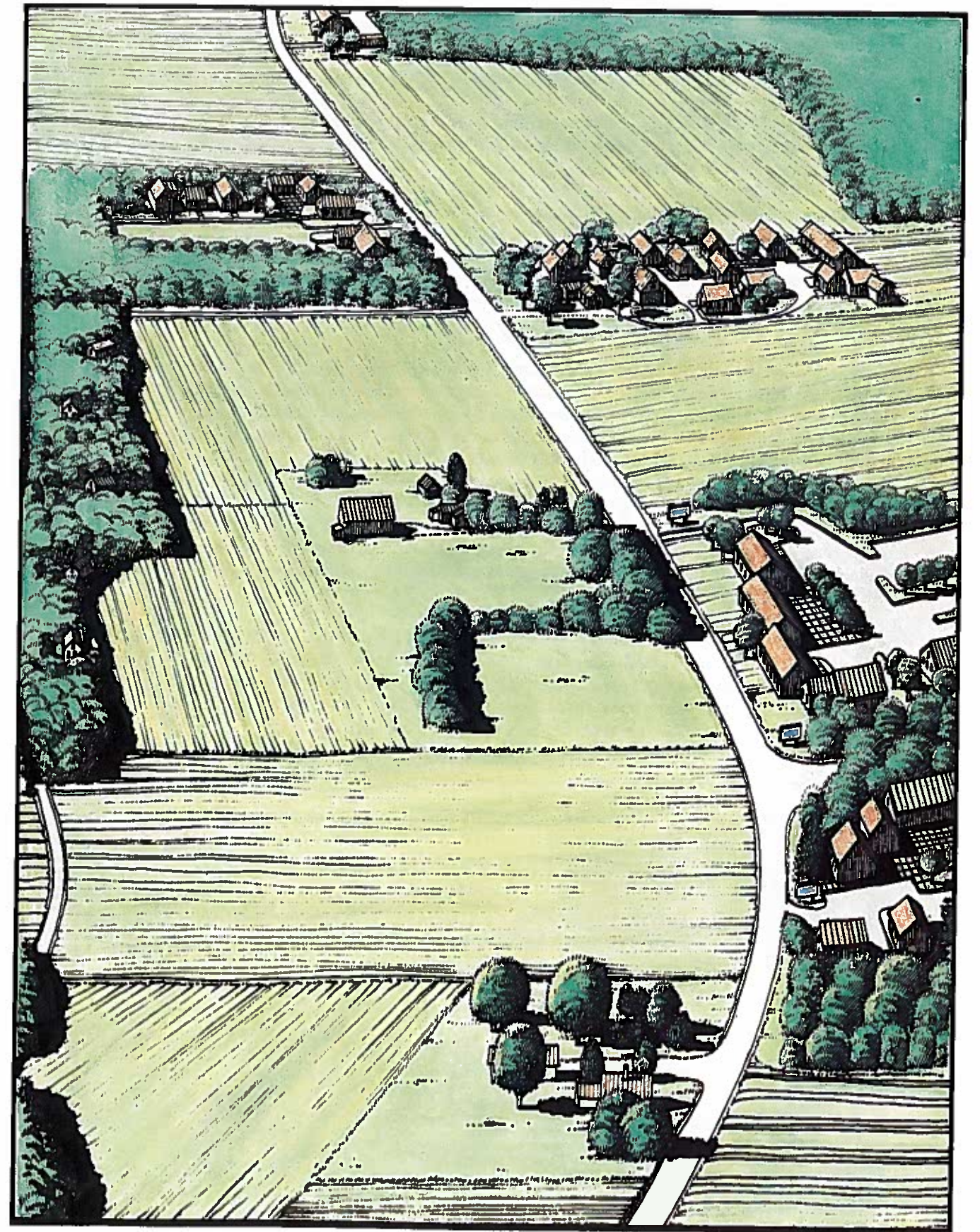
River and Holyoke Range, Hadley



Aerial View of Site B Before Development



Aerial View of Site B After Conventional Development



Aerial View of Site B After Creative Development

3) Creative Development Scenario

- * Commercial development clustered in woods and at major intersections.
- * Signage and lighting controls, underground utilities.
- * Parking and storage located behind buildings.
- * New commercial structures reflecting the traditional architectural character of the area, forming a strong building edge along the street. Residential development located in clusters in the woods and at the edges of the farmland.
- * Residential lot sizes varying from 10,000 s.f. to 20,000 s.f. Multi-family attached housing built to resemble traditional farmsteads with rambling, attached houses and barns.
- * Elderly and affordable housing included in residential mix.
- * New residences reflecting vernacular architectural style.
- * Moderate road widths; roads avoiding farmland, fitting topography.
- * Development rights sold to Massachusetts Department of Food and Agriculture.
- * Fee title to farmland sold at reduced cost to nearby farmer who continues to farm the land.

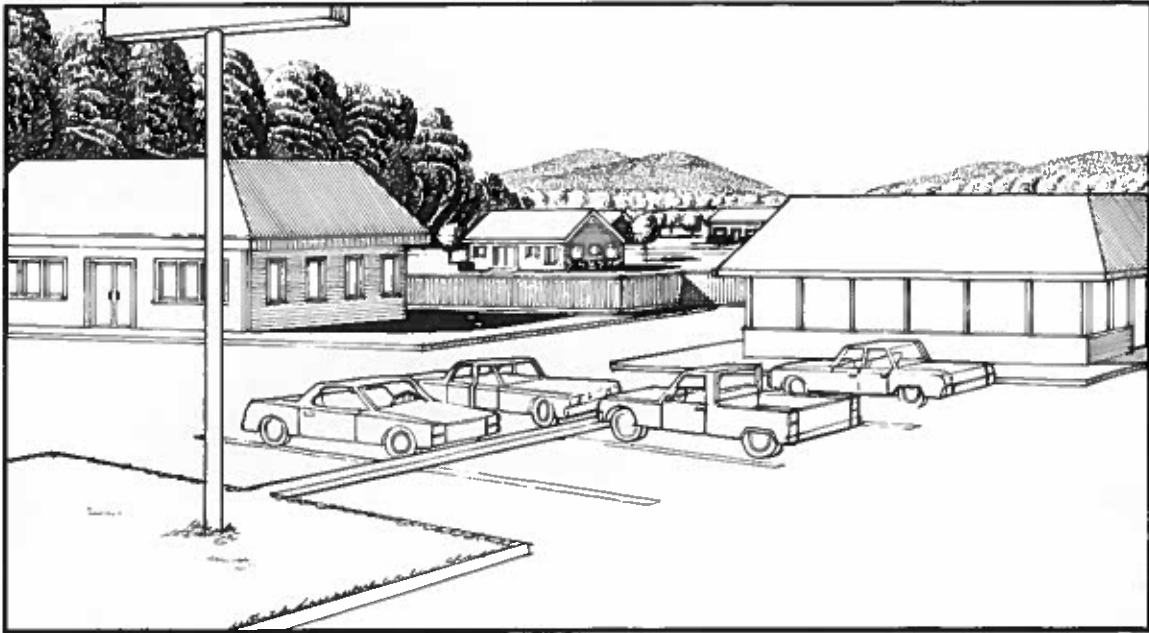
Realizing the need to protect as much of his farm as possible while still developing the land to its highest and best use, Walter approached Janet Harkness, a tasteful local real estate entrepreneur with a growing reputation for sensitive development. Janet suggested a phased development plan for the property, based on the town's newly-enacted Farmland/ Open Space Conservation and Development by-law (see page 169 of this manual), which encouraged flexible layouts and which prohibited new development on farmland from consuming more than 50% of the parcel. She offered Walter \$1,187,000 for his property (\$625,000 for the 90 acres to be built upon, and \$562,000 for the development rights to the other 90 acres which were to remain in agriculture). These sums were to be paid over five years to minimize his capital gains taxes. Janet hired a local multi-disciplinary consulting firm to prepare the development plan. Planners, landscape architects, engineers, surveyors, soil scientists, historians and archaeologists worked with Janet and Walter to prepare the plan.

Their plan contained the same amount of development as had the previous proposal, but located this development on only half the land area of the parcel. Walter later sold the other half, which was to remain protected farmland, to a young farmer nearby for \$110,000, an affordable sum based on the land's agricultural value. Thus, Walter's total receipts were \$1,297,000, an increase of \$47,000 over the amount offered to him for the "conventional" scenario.



Ground Level View of Site B Before Development

Janet's development plan grouped the commercial development on a ten acre site adjacent to the state highway. All the businesses which would have been spread out in a long strip along the highway were to be located in an attractive and convenient commercial center. Designed to reflect the traditional architecture of the town, the buildings formed a strong edge along the highway, screening the parking which was located at the rear of the commercial cluster. Merchants therefore had opportunities for wall signs and display windows facing in two directions: the highway and the pedestrian entrances from the rear parking lot. Attractive signs, window displays and indirect night-time illumination provided ample visibility for the development from the state highway.



Ground Level View of Site B After Conventional Development



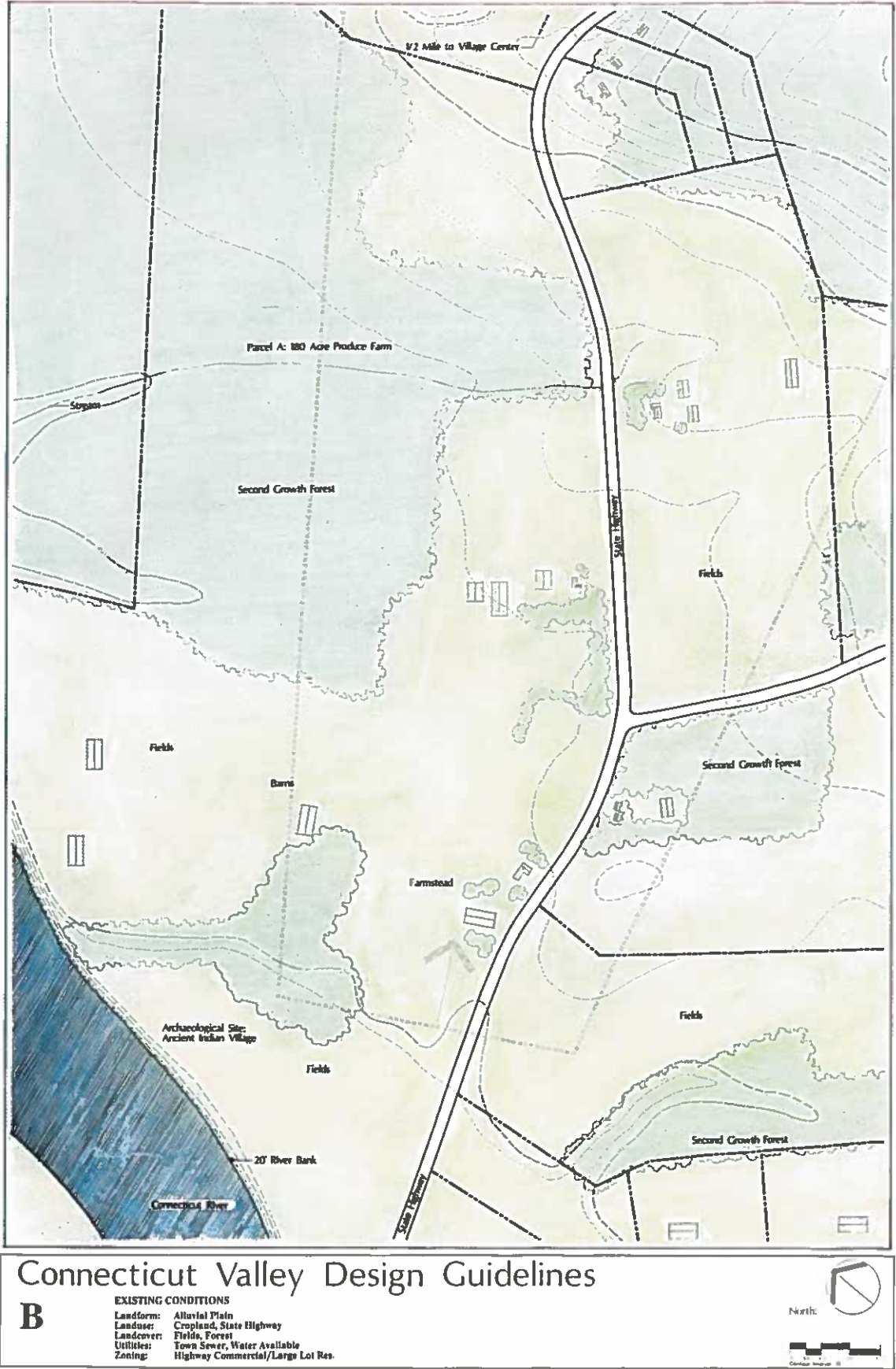
Ground Level View of Site B After Creative Development

Janet's consultants laid out the residential subdivision entirely in the woods, thereby sparing the valuable farmland from development. They based their plan for new development on the lot size and settlement pattern of traditional villages in the area, which had typically featured houses located on quarter to half acre lots laid out in an irregular, informal, non-geometric pattern along roadways. The consultant located 23 quarter-acre lots with 50 ft. of frontage on six acres at the western end of the property. They then drew up 42 half-acre lots with 100 ft. of frontage on 25 wooded acres at the northeast corner of the site. The houses were laid out in a traditional New England village pattern around two commons to provide character, focus and open space for the new community. A wooded buffer was left to screen the new houses from the farm fields, minimizing future conflicts between the farm and the residences. The quarter acre lots tied into a sewage line running under the state highway and the half-acre lots used both individual septic systems, which were able to be located on the best soils for this purpose, under the flexible lot layout allowed under the new by-law, and jointly-shared septic systems.

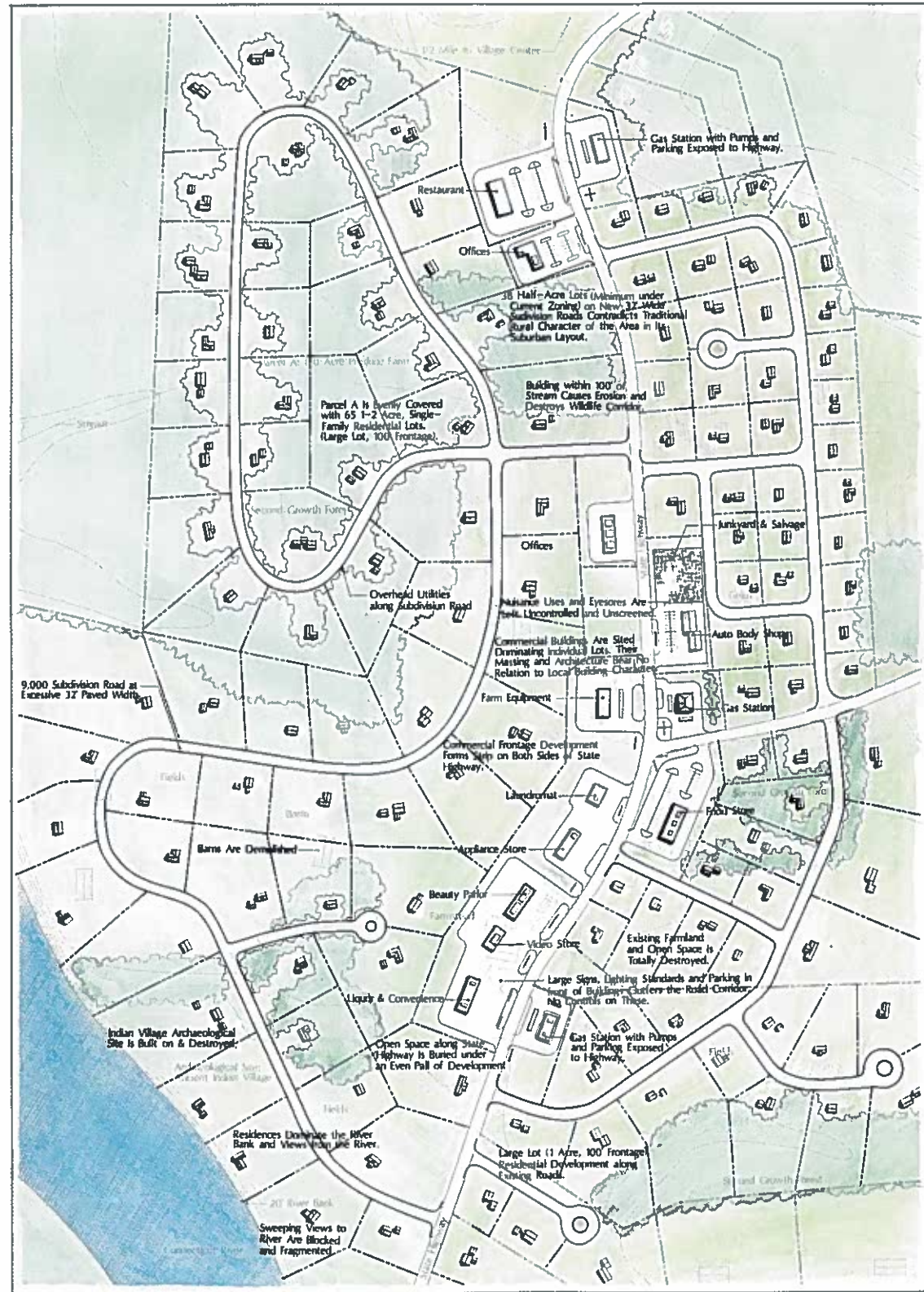
The new subdivision road, built according to the town's recently amended subdivision regulations, was 20 ft. wide with grass and gravel shoulders. It provided safe, convenient access to the development while fitting in with the town's rural character. Only 7,000 ft. long as compared to 9,000 ft. long , Janet saved thousands of dollars on site development costs.



Whately

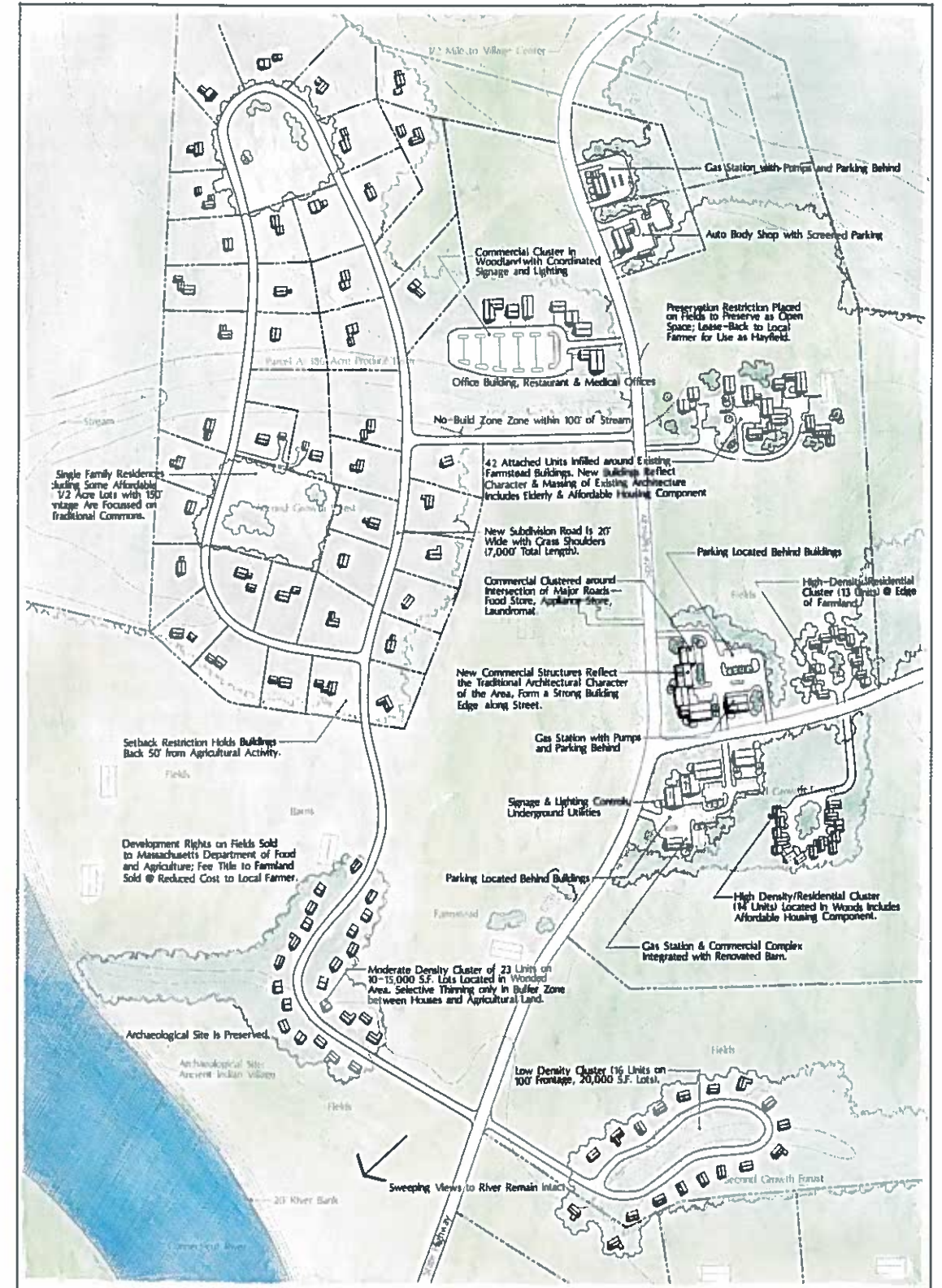


Plan of Site B Before Development



Connecticut Valley Design Guidelines			
B 1			
EXISTING CONDITIONS		NEW DEVELOPMENT (Conventional)	
Landform:	Alluvial Plain	Type:	Highway Commercial/S.F. Residential
Landuse:	Cropland, State Highway	Density:	High: 1 Acre/Unit
Landcover:	Fields, Forest	Layout:	Commercial: Highway Strip
Utilities:	Town Sewer, Water Available		Residential: Lgr. Lot Frontage & Subd
Zoning:	Highway Commercial/Large Lot Res.		

Plan of Site B After Conventional Development



Connecticut Valley Design Guidelines			
B 2			
EXISTING CONDITIONS		NEW DEVELOPMENT (Creative)	
Landform:	Alluvial Plain	Type:	Highway Commercial/S.F. Residential
Landuse:	Cropland, State Highway	Density:	High: 1 Acre/Unit
Landcover:	Fields, Forest	Layout:	Commercial: Highway Strip
Utilities:	Town Sewer, Water Available		Residential: Lgr. Lot Frontage & Subd
Zoning:	Highway Commercial/Large Lot Res.		

Plan of Site B After Creative Development

Site C: O'Neill Property

1) Existing Conditions:

Landform:	Tributary Valley
Landuse:	Dairy Farm, Town Road
Landcover:	Field, Wetland, Forest
Utilities:	No Town Water or Sewer
Zoning:	1 Acre Minimum, 150 ft. Frontage

- * Land owned by retired professor, summer resident.
- * Historic farmstead located adjacent to scenic town road.
- * 60 acres of hayfield and pasture leased to neighboring farmer.
- * 40 acres of wetland, wildlife habitat
- * Old-growth timber & wildlife habitat located on scenic ridgeline east of road.
- * Owner wants to preserve land but is facing financial pressure to sell.

This property is situated in the rolling hills of the north-central Connecticut Valley in Massachusetts. The rocky ridges in this area are more resistant to erosion and have formed a range of hills that stand out in the middle of the valley floor. Amongst these hills are scattered dairy farms located in the more fertile alluvial plains of the small, tributary streams that drain into the Connecticut River. Changes in drainage patterns caused by the glacier have resulted in the formation of numerous wetlands in the area, which support a wide range of wildlife and which play an important role in the region's hydrology.

This area was the site of an Indian path and temporary summer hunting camps. Early European settlers used the path to penetrate the wilderness, and it eventually became the current town road. Small subsistence farms thrived in the early 19th century, their pastures extending up the steep flanks of the surrounding hills. The decline of farming after the 1830's saw only the more productive farms on the better soils survive into the present day.



Dairy Farm, Shelburne

The old Granger farm was a small dairy operation that ceased production in the early 1950's. It was then bought by Martin O'Neill, a college professor who summered on the farm with his family for over thirty years. Prof. O'Neill leased the 60 acres of fields and pasture to a neighboring farmer who operates a large dairy operation by relying on extensive tracts of leased farmland in the area. Now in his late seventies, Prof. O'Neill and his family can no longer come to Massachusetts in the summer and must sell the property. They would like to see the agricultural portion of their land conveyed to the farmer who has rented it for the past thirty years. But because of financial constraints resulting from the Professor's modest retirement income, the family has reluctantly decided to sell the land for its full development value.



Turf Farm, Deerfield

2) Conventional Development Scenario

- * Town road widened and straightened, destroying farmland & scenery.
- * Farmland carved up into large frontage lots.
- * Wetlands, wildlife habitat subdivided, vulnerable to future incursions.
- * Historic character of farmstead destroyed by adjacent development.
- * Homes built in old growth timber and scenic ridgelines.
- * Future timber management precluded by large lot development.

Shortly after the O'Neill property was placed on the market, the town received a state highway improvement grant to rebuild East Mountain Road, which traverses the property from north to south. The engineering plans called for relocating the road through the middle of the farm's fields, widening the paved surface to 30 ft. and acquiring an 80 ft. right-of-way. These plans caused Prof. O'Neill a great deal of consternation and led him to abandon his search for a buyer who would not subdivide the property. Feeling that the road plans meant the destruction of the property in any case, he quickly sold the land to a local land speculator.

The speculator drew up a subdivision plan making full use of the plans for the expanded and relocated roadway. He laid out 26 large frontage lots off both the existing and proposed roads. Houses were built on the former farm fields as well as in areas of prime forest, steep slopes and on highly visible ridgetops. Wetlands and streams were divided into multiple ownership and left vulnerable to future development. Prime forest lands were developed and split into a pattern of multiple ownership, precluding their efficient management in the future. A uniform grid of houses on large lots consumed all the undeveloped land on the property, damaged wildlife and environmental integrity, and imposed a typically suburban development pattern on the former farm. The Planning Board's attorneys determined, to the townspeople's dismay, that the subdivision plans were drawn up in full conformance with the zoning by-laws and subdivision regulations. Residents were shocked that their landuse regulations allowed and actually encouraged development that was so obviously destructive of their town's environment and character. Unfortunately, it was too late to do anything about it.



Mount Toby from Whately

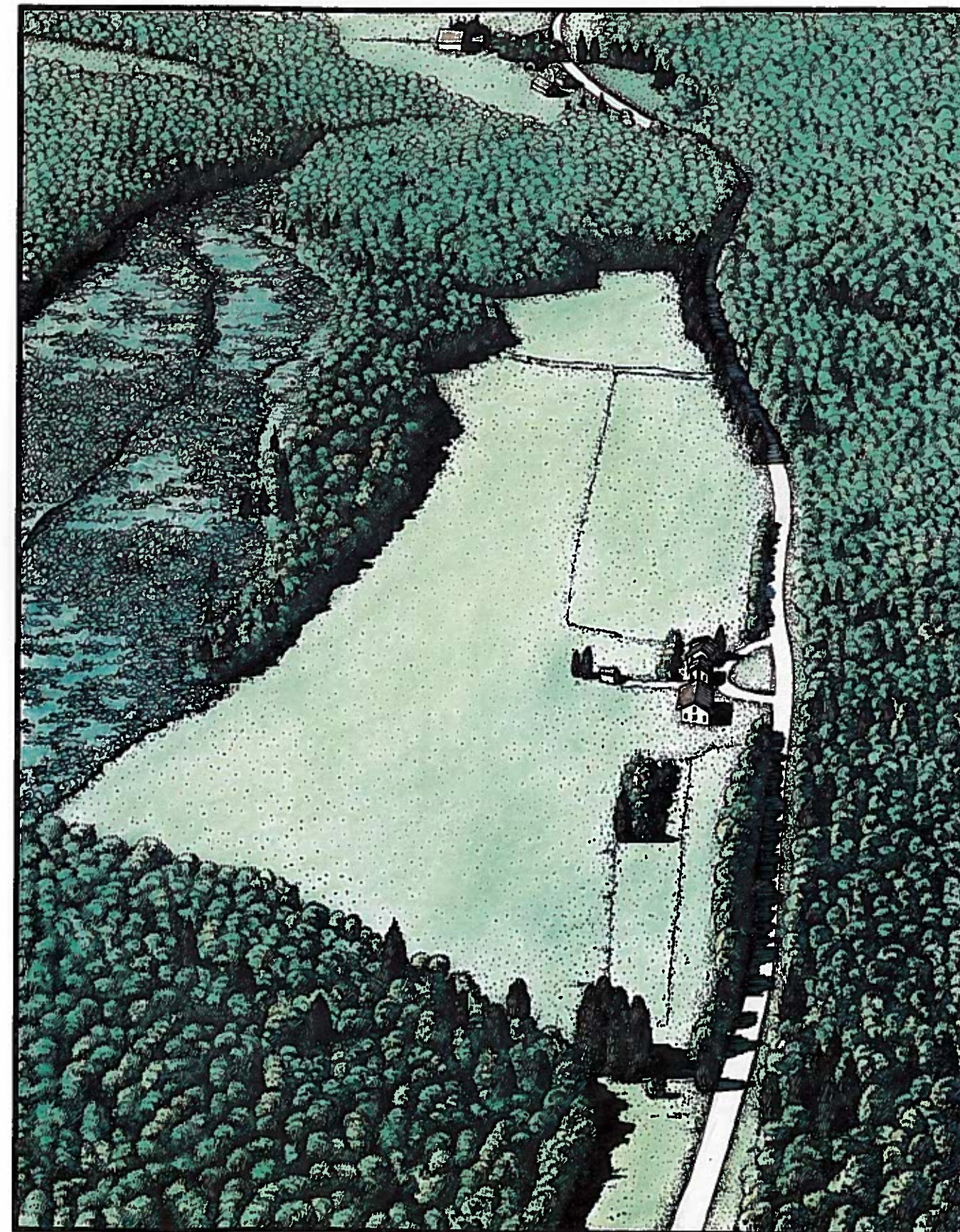
3) Creative Development Scenario

- * Town road designated as scenic road, moderate improvements within existing right-of-way.
- * Town enacts mandatory open space development provision for farmland.
- * Developer locates 28 lots on 24 acres, saving over 100 acres of farmland & forest.
- * Farmland, Wetlands, wildlife habitat, old-growth forest, ridgelines and scenery preserved.
- * Farmland continues to be leased to neighboring farmer.

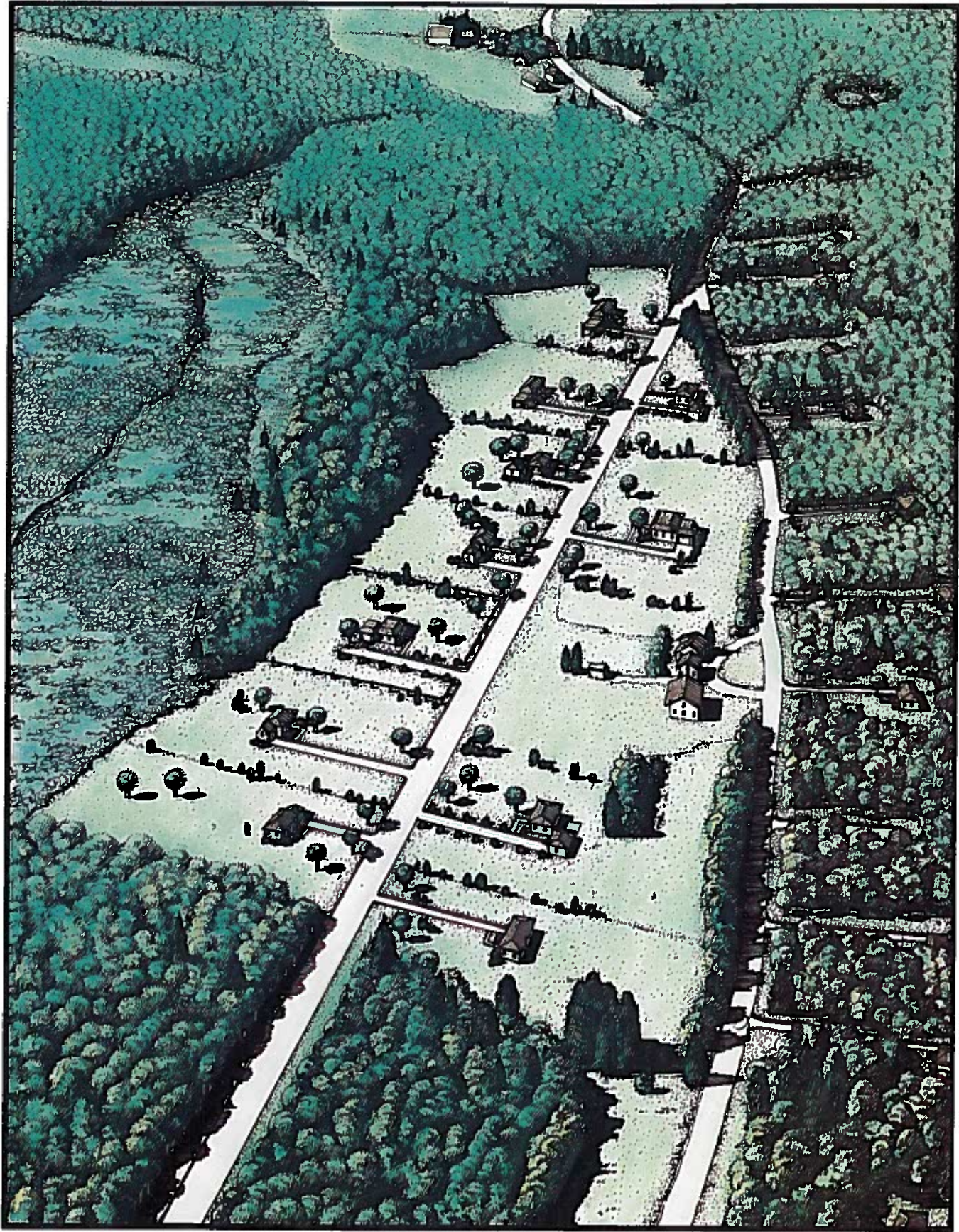
Shortly after Prof. O'Neill's land was placed on the market, the town's Planning Board proposed to designate East Mountain Road a scenic road under Chapter 40, Section 15(c) of the Massachusetts General Laws. After a public hearing, the proposal was placed on the warrant of the town meeting and passed by a large majority. Designation of the road as scenic prevented the town highway department's relocation plans, requiring them instead to repave the existing road with minor widening and realignment to correct dangerous curves and intersections. Improving the road within its existing right-of-way allowed for improved road safety while saving hundreds of thousands of taxpayer dollars that would have been spent on needless widening and straightening. The improvements made under the Scenic Roads Act also preserved the rural character and scenery of the roadway and prevented the destruction of farmland.

Prof. O'Neill was so impressed by the town's careful improvement of the road that he persevered in his efforts to sell the land intact to a buyer who would continue to lease the farmland to his neighbor for agricultural uses. He was finally contacted by the New Age Development Company, a private firm that specialized in using alternative development techniques to combine development with farmland and open space preservation. Ron Equity, the president of New Age, was a former land speculator who had recognized that careful development could also make a great deal of financial sense. Ron drew up a plan for Professor O'Neill showing how clustering development on less sensitive portions of the site could preserve farmland and scenic open space, while allowing the same volume of development to take place. Fortunately, local voters had recently adopted revisions to the zoning by-laws that required grouping of houses on 35,000 sq.ft. lots, combined with a program of open space preservation, whenever farmland was proposed to be subdivided. Changes to the subdivision regulations were also passed reducing the required road widths and eliminating the requirement for paved sidewalks and curbs on rural subdivision roads.

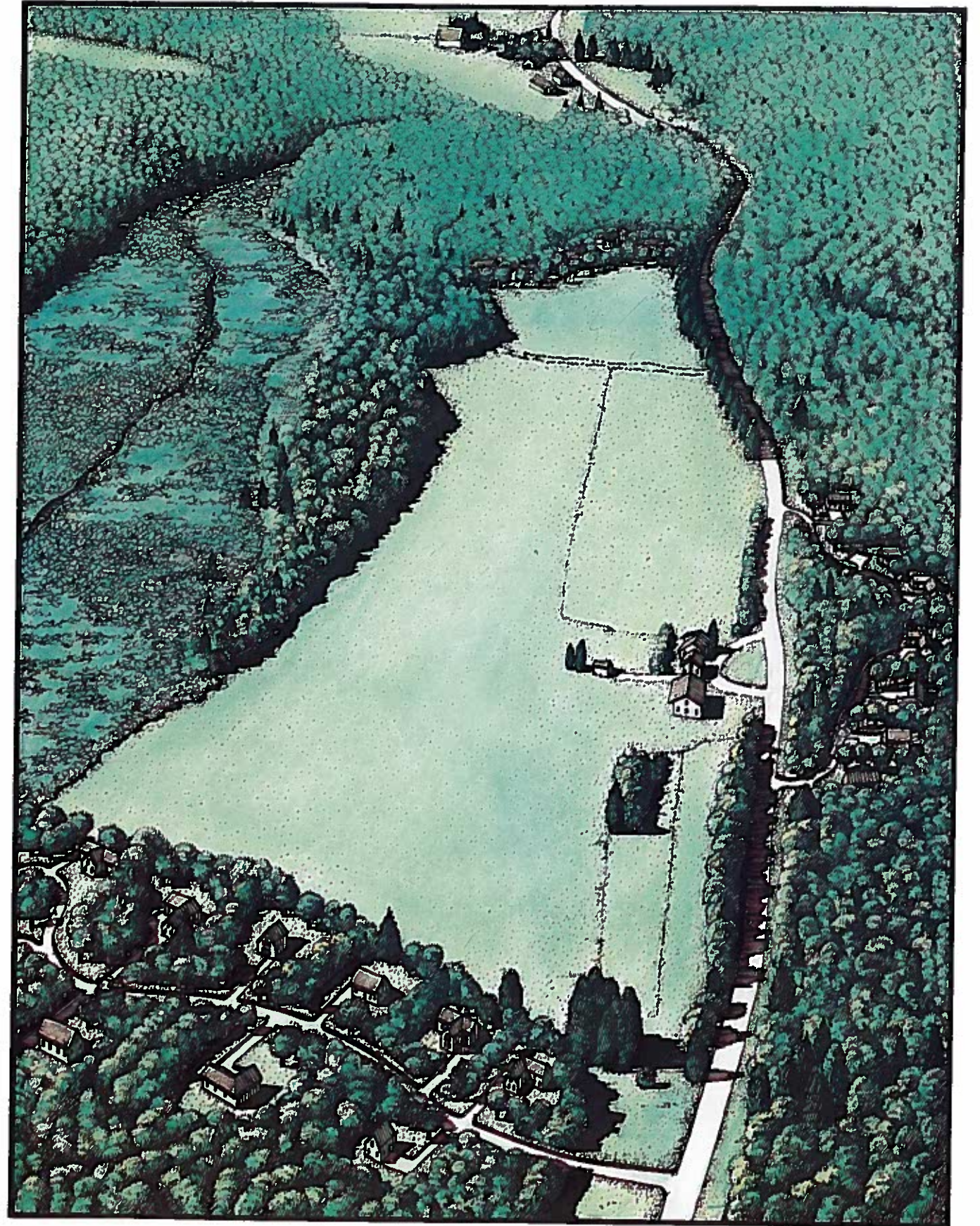
The new zoning by-laws allowed Ron Equity to locate 28 single-family houses in three groups on the site. He chose relatively flat locations with the best available soils for septic systems. By making good use of the open space provision, he was able to fit the 28 houses on only 24 acres, leaving more than 100 acres as protected open space. In two of the housing groups, he created lots along existing road frontage, utilizing common driveways to reduce environmental and visual impacts. In the third



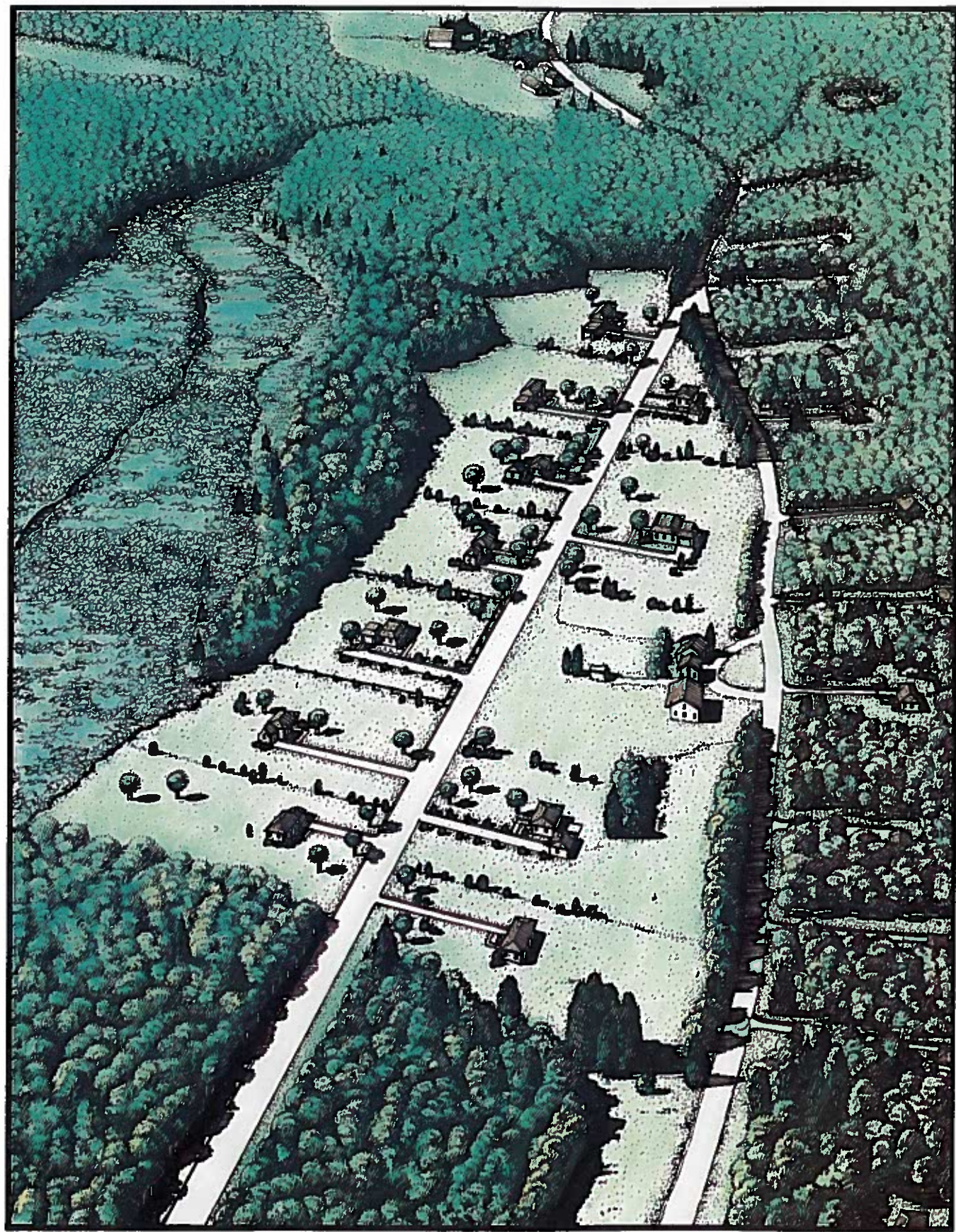
Aerial View of Site C Before Development



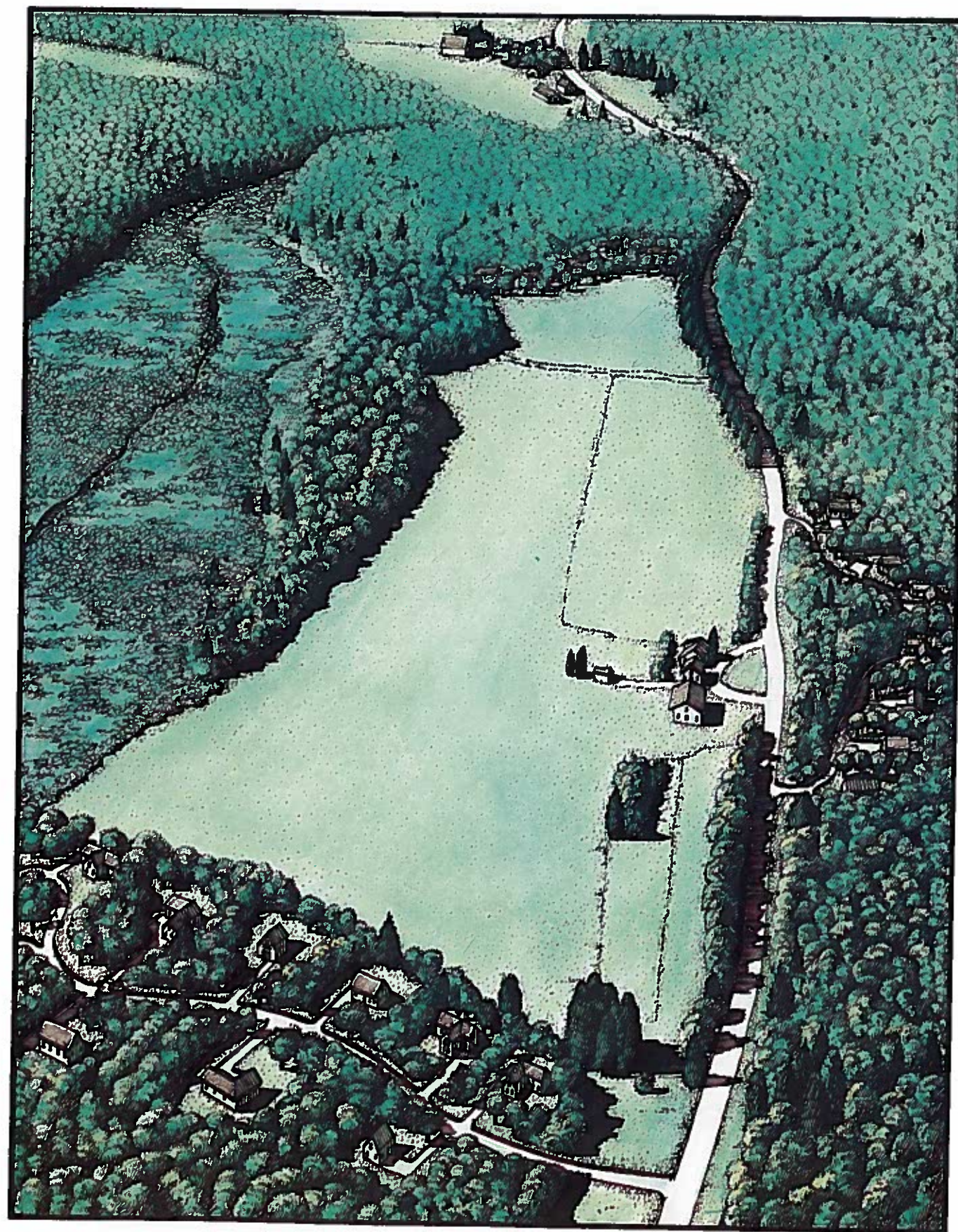
Aerial View of Site C After Conventional Development



Aerial View of Site C After Creative Development



Aerial View of Site C After Conventional Development



Aerial View of Site C After Creative Development

grouping, he created a 12-unit subdivision which had far fewer impacts than "frontage development" and which allowed him to access good building sites that would otherwise have been inaccessible. While the town disliked the word "subdivision", they overcame their prejudice after Ron demonstrated that, in this case, a subdivision was much more desirable environmentally and visually than standard frontage development over which the Planning Board had little control. Because the engineering standards in the subdivision regulations had been modified, Ron Equity was able to build an 18 ft.-wide subdivision road that fit in with other rural roads in the area. Instead of looking like a typical, excessively broad suburban subdivision street, it appeared to be just another well-maintained rural roadway.

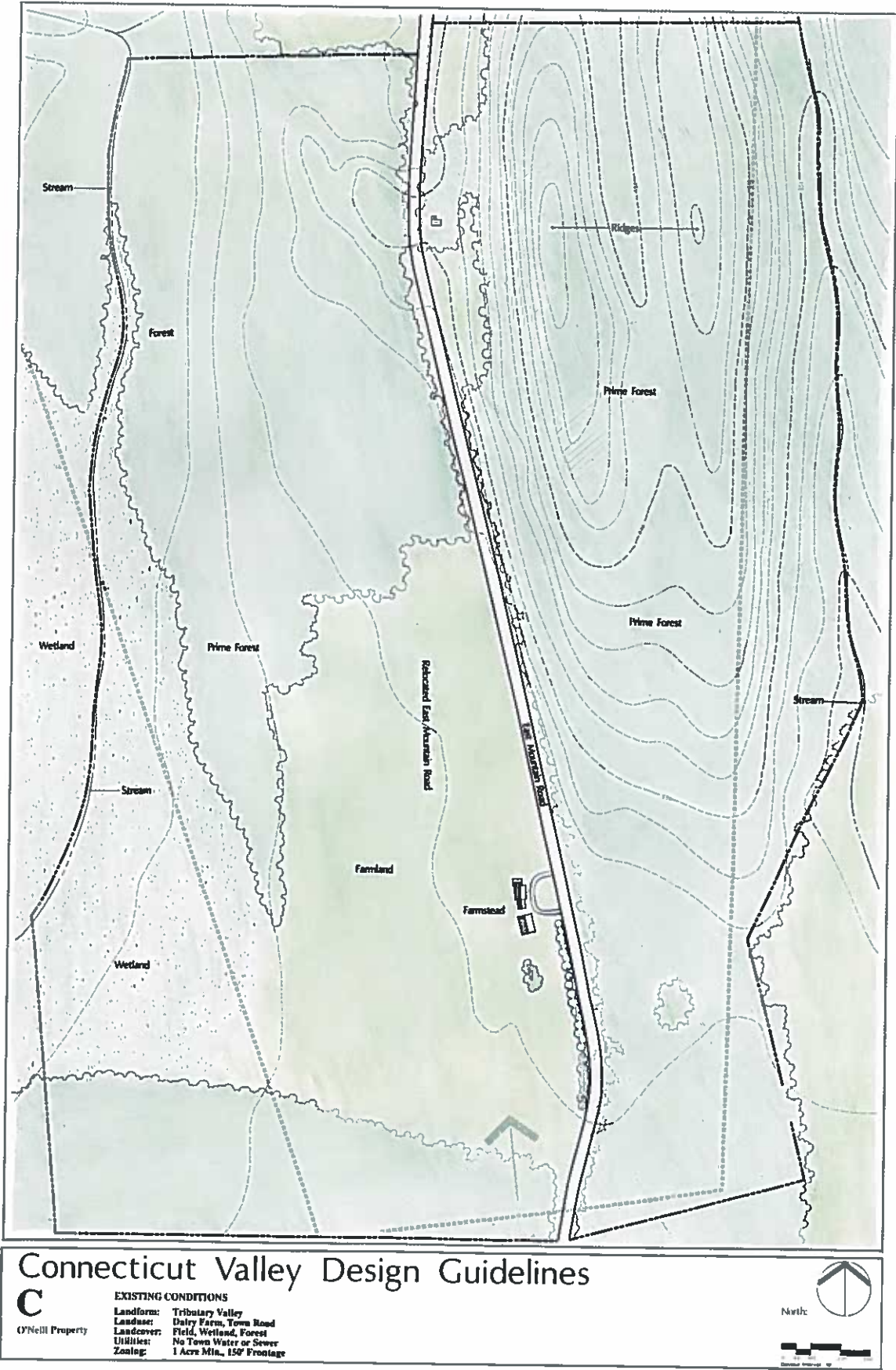
The open space remaining after the development was laid out was deeded in perpetuity to a homeowners' association established to own and manage common land and to maintain the common driveways and subdivision road. Financed by an endowment fund created from a portion of the lot sales, the homeowners' association entered into a long-term lease agreement with the farmer who had rented the land from Prof. O'Neill. The farmland would stay in farming and benefit the entire new community. Clauses in the deeds of sale prevented homeowners from complaining about farm odors, noise and livestock, while protecting them from careless use of pesticides, water pollution and other legitimate farm-related sources of pollution. Vegetative buffers planted with native trees and shrubs were designed into the development to separate the residences from the working farmland.

The homeowners' association also implemented a management plan for the large tracts of prime timber which were saved as a result of the open space development plan. Areas of "old growth" timber and wildlife habitat were set aside for preservation, while stands of prime timber were prepared for selective harvesting by a licensed professional forester. Areas of woodlot were open to residents for the cutting of firewood. Conservation restrictions were also placed on visually vulnerable ridgelines and summits as well as on the wetlands to the west of the farm. The original farm house and buildings were kept with the farmland and rented out for use by the farmer.

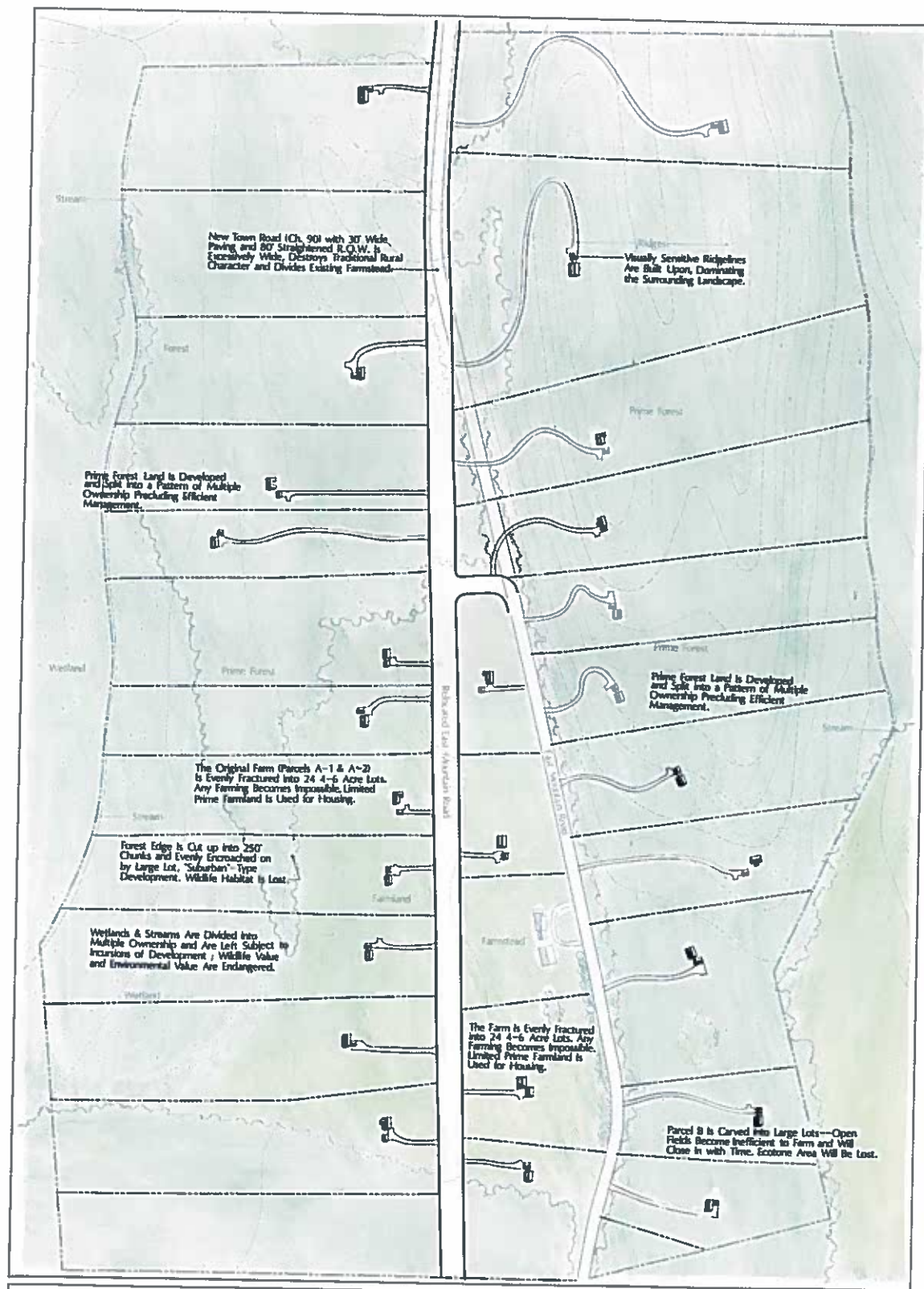
Prof. O'Neill was able to sell the land for its fair market value. Ron Equity sold the 28 lots for substantially more than the amount he estimated conventional frontage lots were worth. The smaller lot sizes were more than offset by the fact that each house offered access to and views of almost 100 acres of permanently preserved farmland, forest, wetland and wildlife habitat: the very features that attract new residents to the country in the first place. Responsible management of the open land was ensured by the creation of a well-funded and operated homeowners' association and the leasing of the farmland to the neighboring farmer.



Hadley



Plan of Site C Before Development



Connecticut Valley Design Guidelines

C1

O'Neill Property

EXISTING CONDITIONS

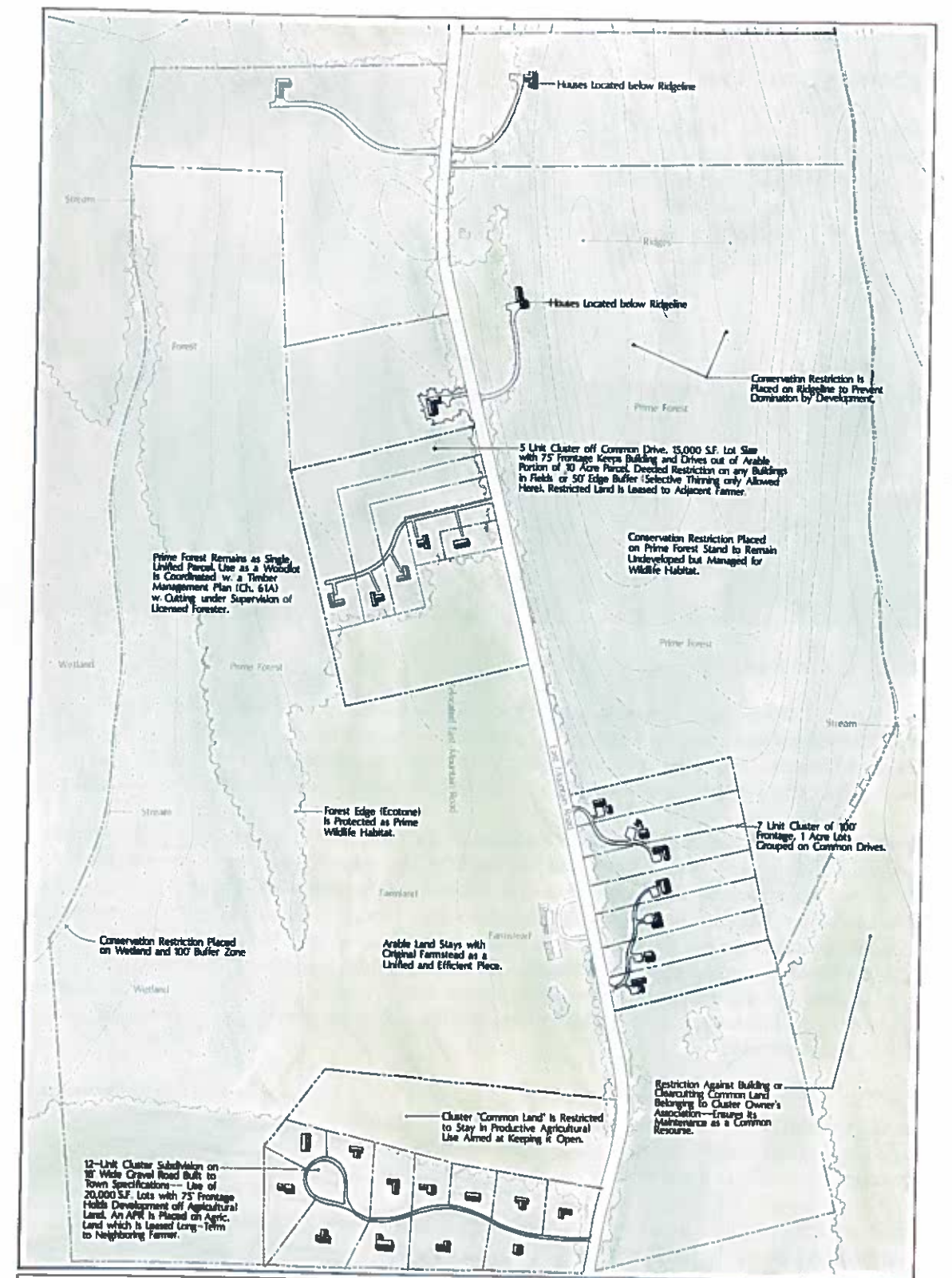
Landform: Tributary Valley
Landuse: Dairy Farm, Town Road
Landcover: Field, Wetland, Forest
Utilities: No Town Water or Sewer
Zoning: 1 Acre Min., 150' Frontage

NEW DEVELOPMENT (Conventional)

Type: Single Family Residential: Detached
Density: Low: 10 Acres/House
Layout: Frontage ANR Off Relocated Road



Plan of Site C After Conventional Development



Connecticut Valley Design Guidelines

C2

O'Neill Property

EXISTING CONDITIONS

Landform: Tributary Valley
Landuse: Dairy Farm, Town Road
Landcover: Field, Wetland, Forest
Utilities: No Town Water or Sewer
Zoning: 1 Acre Min., 150' Frontage

NEW DEVELOPMENT (Creative)

Type: Single Family Residential: Detached
Density: Low: 10 Acres/House
Layout: Frontage/Shared Drives: 1/2A Lots
Open Space Subdivisions: 1/2A Lots

IMPLEMENTATION STRATEGY

New Zoning: Open Space (Cluster) Provision
Site Plan Review
Subd. Regs: Modified Site Engineering Standards,
Reduced Widths for Drives
Other Tools: Modified Town Highway Policy, APR



Plan of Site C After Creative Development

Site D: Slater Farm

1) Existing Conditions

Landform:	Rolling Hills
Landuse:	Dairy Farm
Landcover:	Field, Pasture, Forest
Utilities:	No Town Sewer or Water
Zoning:	2 Acre Minimum Lot Size 200 ft. Road Frontage



Dairy Farm, Shelburne

Edgar Slater's 180-acre dairy farm is located in the foothills ten miles to the west of the Connecticut River. The terrain here consists of gently rolling hillsides separated by steep valleys cut by tributary streams and brooks. The rocky, often poorly drained soils are unsuitable for the vegetables and tobacco grown down in the Connecticut Valley, but offer moderately good conditions for dairy farming.

When Slater's ancestors cleared the land in the early 1800's, most of the surrounding countryside was an untouched wilderness. Native Americans had used the area primarily as a secondary hunting ground and few permanent villages had been established there due to the harsh winters, difficult soils and lack of major rivers and lakes. As prime farmland grew scarcer in the more desirable Connecticut Valley, settlers migrated into the western hills to find available farm sites. The virgin timber was rapidly cut down to supply the region's demand for building materials and large areas were simply burned to quickly transform the dense forests to open fields. Within a span of fifty years, from 1780 to 1830, most of the hills surrounding the Slater farm had been stripped of trees and converted to pastures, meadows and fields.

After 1830, farming in the hilltowns west of the Connecticut Valley began to decline due to competition from midwestern agriculture. Less productive farmland in the hills was gradually abandoned over the succeeding decades and quickly returned to second-growth forest. Today, the Slater farm is surrounded by woods, as it was when it was first carved from the wilderness.

The Slater farm occupies a broad ridge drained by three small brooks. A cornfield, hayfields and pasture are located on the fertile soils of the ridgetop while the steeper ravines are forested. The fields provide dramatic vistas of the Connecticut Valley, over ten miles distant. Stone walls and hedgerows form boundaries between the fields. A 20-acre stand of prime timber is located in the southern portion of the property, featuring maple, ash and oak trees 3 to 5 feet in diameter. The brook and ravine adjacent to the prime timber stand provide habitat for a rare species of salamander and a fern listed as endangered in Massachusetts.

2) Conventional Development Scenario

- * Slater Farm subdivided into six 20-30 acre frontage lots.
- * Historic Slater farmstead torn down, replaced by contemporary ranch.
- * Rare species habitat impacted by new driveways
- * Inappropriate architecture located in center of fields
- * Prime timber stand destroyed by house construction
- * Rural character, views destroyed by house construction, in spite of very low density.

Having reached retirement age with no offspring interested in continuing farming, the Slaters reluctantly placed their entire property on the market, hoping to be able to sell to another farmer interested in continuing to operate the farm. While several nearby farmers made tentative offers, none could secure sufficient financing to purchase the property at its "development value" selling price. Growing impatient to sell, the Slaters finally sold the land to group of affluent out-of-state residents interested in building "mini-farms" and summer retreats on large parcels of land. The purchasers bought the entire farm intact, later dividing it into five large lots of 20 to 30 acres each, in addition to a smaller lot containing the original Slater farmstead. The lots were laid out to take advantage of the state law that exempts developments from local planning board review when all the lots possess sufficient frontage on a town road (in this case, greater than 200 ft.), and contain sufficient land area (at least two acres). Under Massachusetts' law the town's planning board had no control over the lots as delineated by the new owners, and had no authority to ensure that future construction would avoid damaging the character and environment of this unique property.

After subdividing the land, five of the new owners each designed and built their own houses, while the sixth tore down the historic Slater farmstead and built a contemporary ranch in its place. Four of the new homes were located in the middle of the former fields, rendering them useless for agriculture, disrupting the rural character of the farm, and blocking views from the road out over the Connecticut Valley. The fifth house was located in the prime timber stand, compromising the area's potential for future timber production. The new driveways bisected the farmland, filling in the rare species habitat along the banks of the brook. The architectural design of the new homes failed in any way to relate with traditional regional building styles and included, in addition to the above-mentioned ranch, an A-Frame, an international style modern, a log cabin and "solar saltbox". The location of the new houses in the center of the fields highlighted the inappropriateness of their exterior design.



Hayfield, Amherst



Berkshire Foothills, Shelburne and Colrain

The new residents had hoped to operate mini-farms from their new homes, but found that they had inadvertently destroyed most of the agricultural value of the property and were thus unable to operate even small hobby farms on the land. They were also displeased to look out their living room windows to see former scenic vistas blocked by their neighbors' new houses, driveways and lawn ornaments which had given this formerly pastoral New England landscape a distinctly suburban appearance. To residents of the town, the conventional development of the Slater Farm demonstrated that even development at extremely low densities can result in the destruction of farmland and rural character. Five new homes on twenty to thirty-acre lots had a major impact on a former farm because of the unfortunate placement of buildings and driveways on the land. After this experience, town residents realized that large-lot zoning alone could not ensure the preservation of farmland and town character and could, in fact, contribute greatly to their destruction.

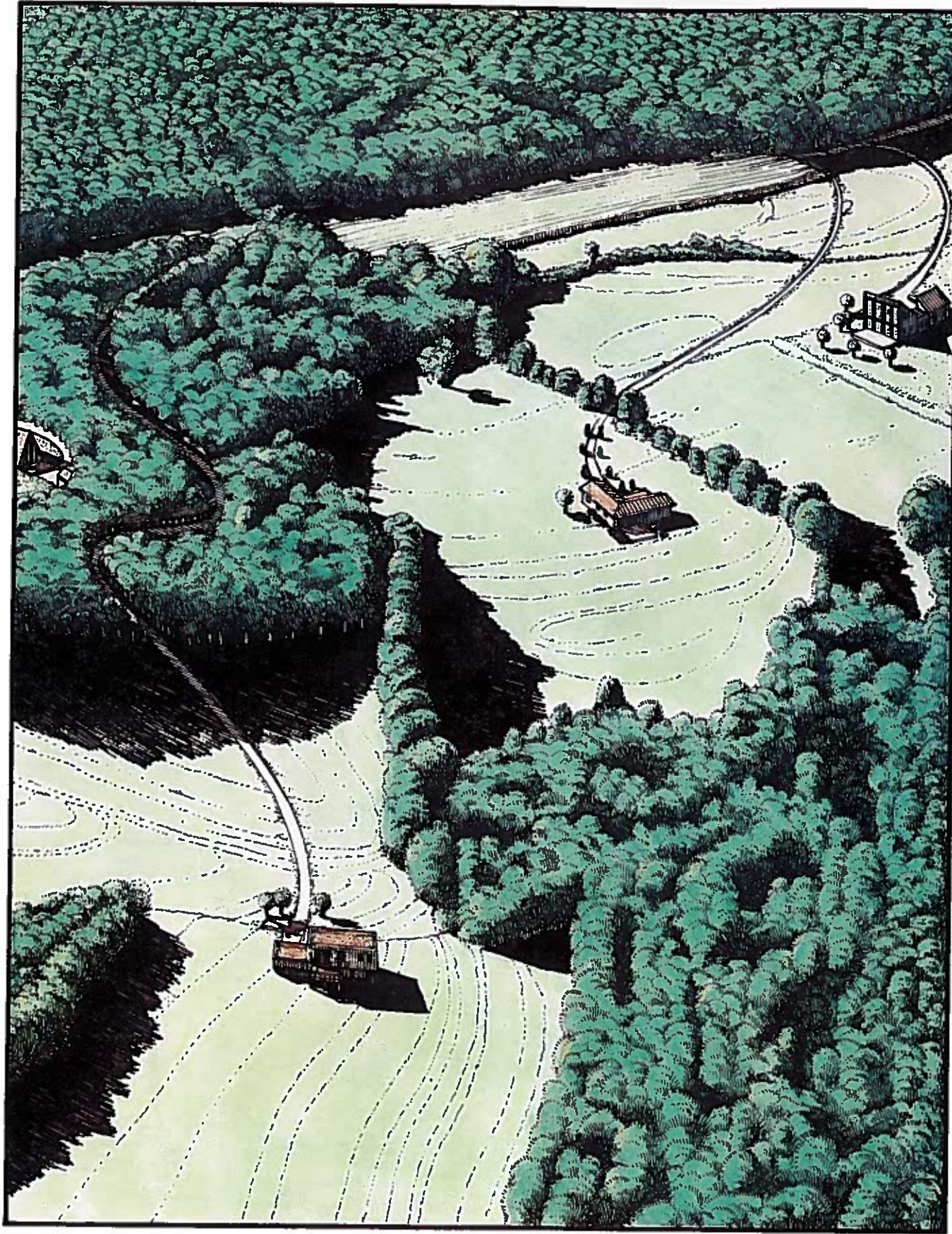
3) Creative Development Scenario

- * Town enacts Farmland/Open Space Conservation & Development By-Law.
- * Buildings relocated through site plan review to edge of fields, saving farmland, views, prime woodland.
- * Driveways relocated to avoid farmland, rare species.
- * New houses reflect architectural character of town.
- * Common driveways used to reduce construction impacts on farmland, visual quality.

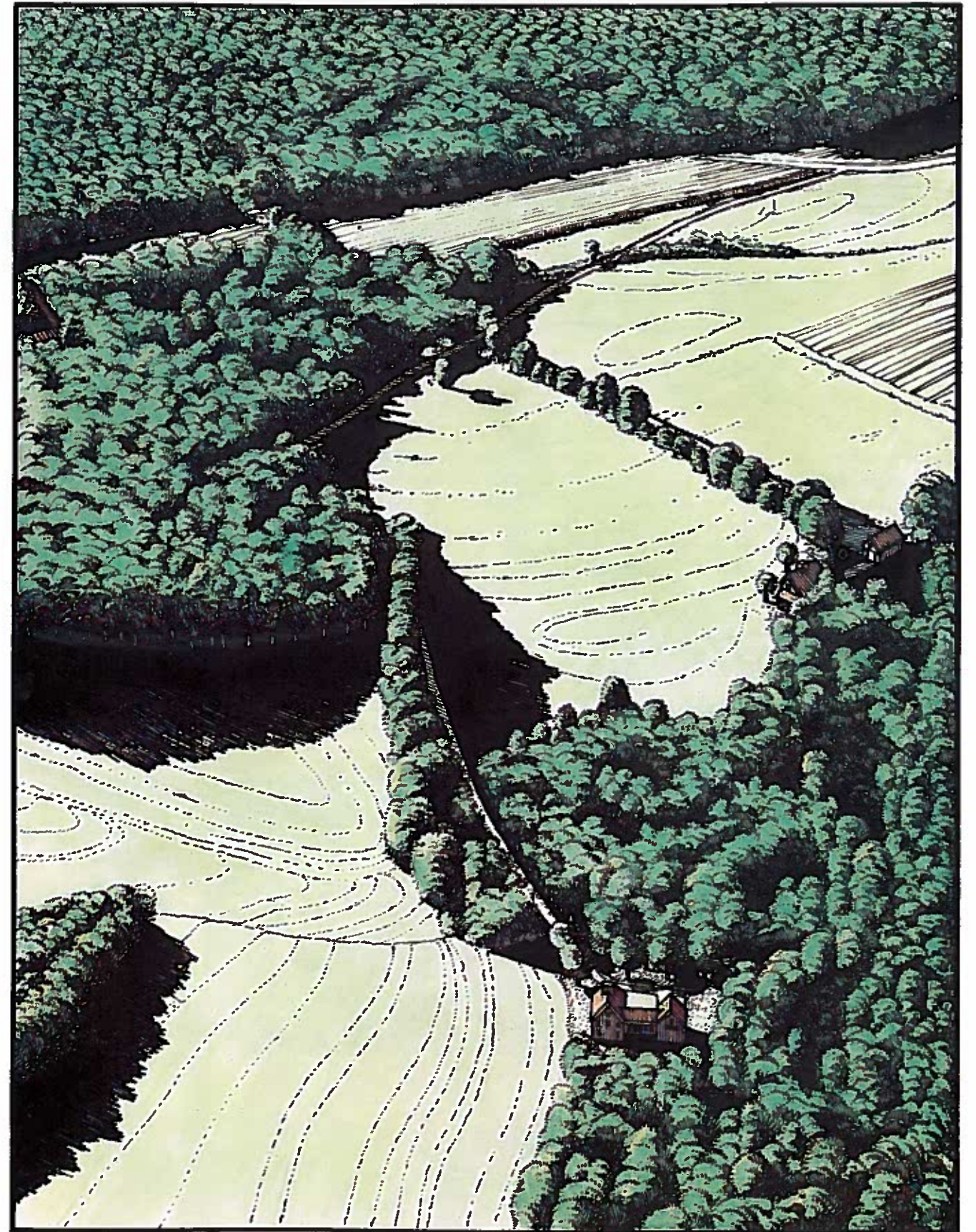
Realizing the inability of existing zoning by-laws to control the negative impacts of development in sensitive landscapes, the town adopted a Farmland/Open Space Conservation and Development Bylaw. This bylaw required site plan review for the creation of three or more lots within any 20-year period, from an existing parcel of farmland, whether or not they constituted a "subdivision" under state law. Site plans are reviewed to ensure that new developments on farmland are designed to minimize their impacts upon sensitive environmental features and scenic areas or vistas.



Aerial View of Site D Before Development



Aerial View of Site D After Conventional Development



Aerial View of Site D After Creative Development



Winter Field, Shelburne

In the case of the Slater Farm, the purchaser's proposal to create five new lots triggered the site plan review clause of the Farmland/Open Space Conservation and Development Bylaw. The purchasers were required to draw up plans showing, in addition to the proposed layout of the new lots, the proposed location of the houses, driveways and other site improvements. In reviewing the site plan, the Planning Board suggested modifications to the location of the houses and drives to minimize the development's impact on the farmland. The suggestions proposed by the Board included relocating the proposed houses and driveways from the center of the fields to the edges of the fields where they would occupy less farmland, have a lesser impact upon the property's rural character, and be sheltered from summer sun and winter winds. In addition, they would maintain the long views over open fields for themselves and their neighbors to enjoy. Driveways were realigned to follow existing hedgerows, stone walls and the edges of existing fields. An overall reduction in the number and length of driveways was achieved through the use of common driveways.

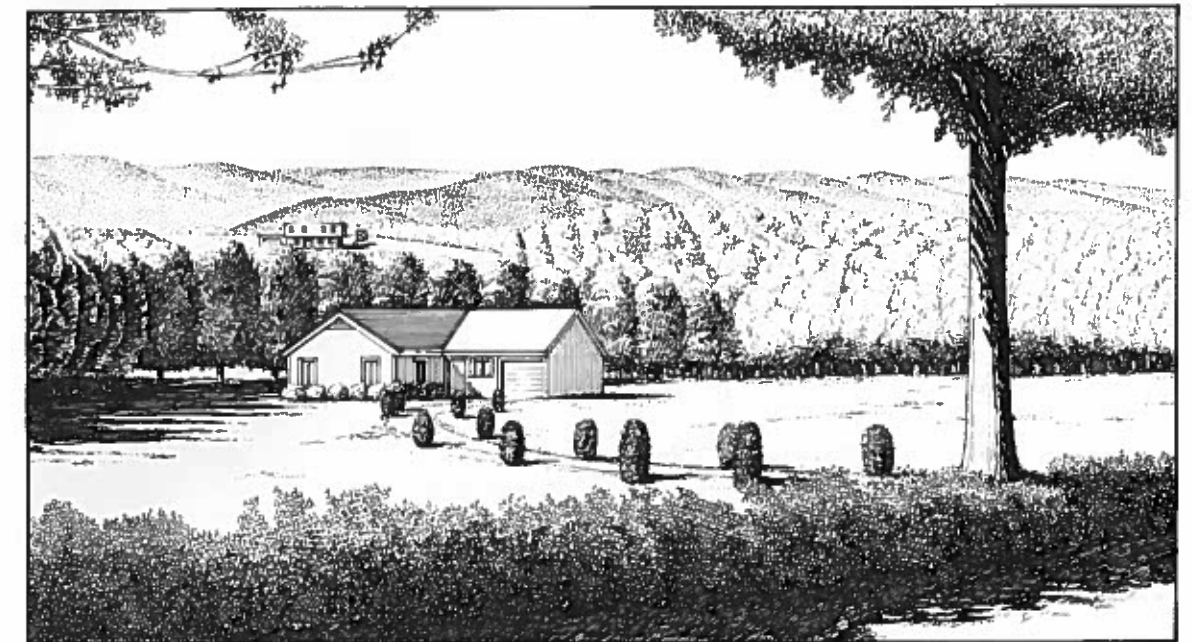
No changes to the proposed lot layouts were required; the site's farmland and scenic features could be preserved simply through moving the location of the houses and drives by several hundred feet within



Ground Level View of Site D Before Development

the proposed lots. By sharing access, the number of driveways was reduced from five to three, saving additional farmland and reducing site development costs.

The Town Historical Society prepared a booklet describing the architectural heritage of the region and discussing how new construction could blend in with existing structures. The booklet also explained how the settlement pattern of the community developed and how structures were traditionally located. It made suggestions for the layout of new developments that would reflect traditional settlement patterns, avoiding uniform, suburban grid-like lot layouts.



Ground Level View of Site D After Conventional Development



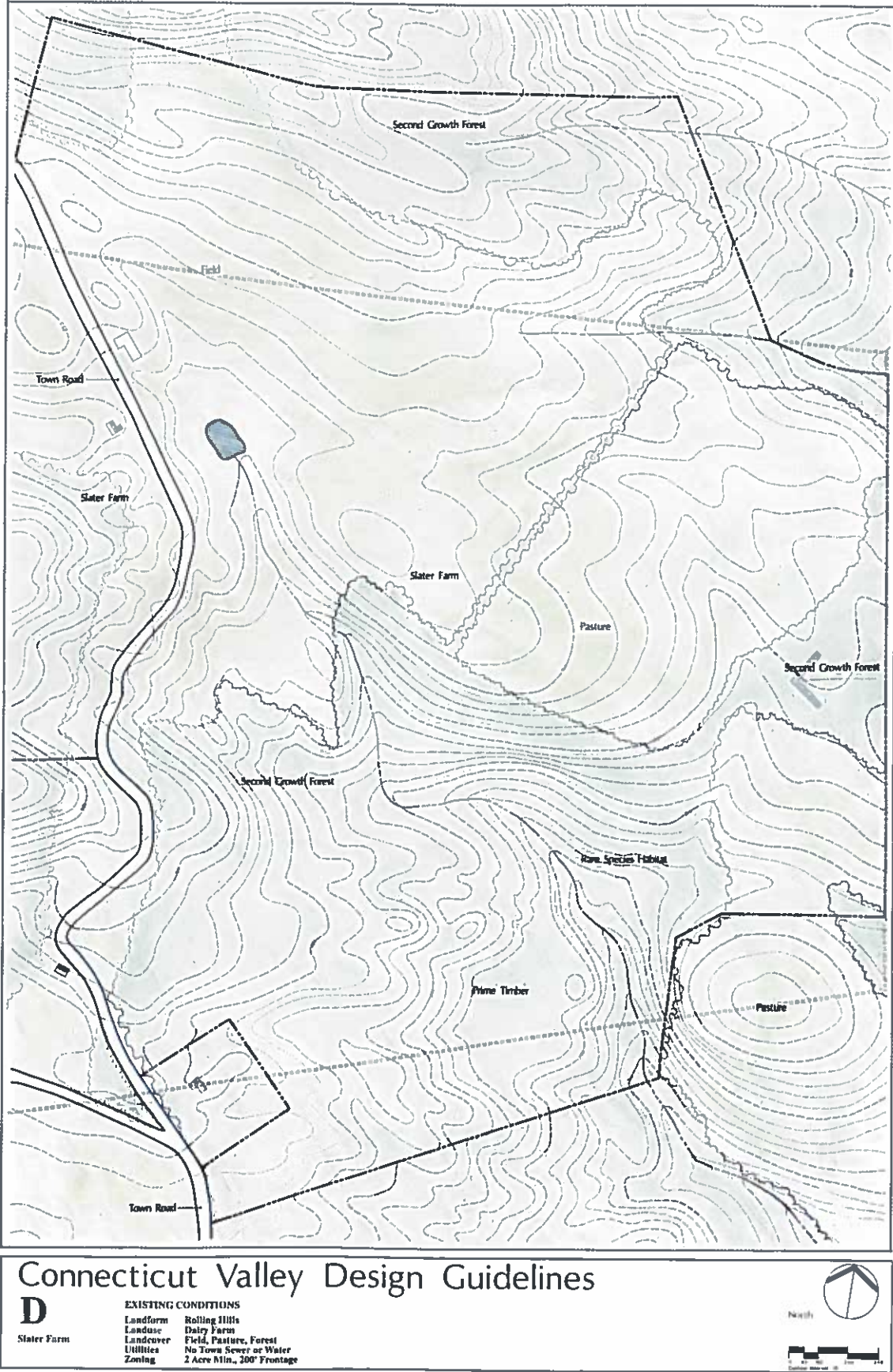
Ground Level View of Site D After Creative Development

After reading this booklet and informally discussing the issue with planning board members, the new owners decided to modify their house plans to blend in with the architectural environment of the town. More appropriate roof pitches, use of traditional building materials, variation of building massing and careful fenestration helped the new houses fit in with and complement the character of the community.

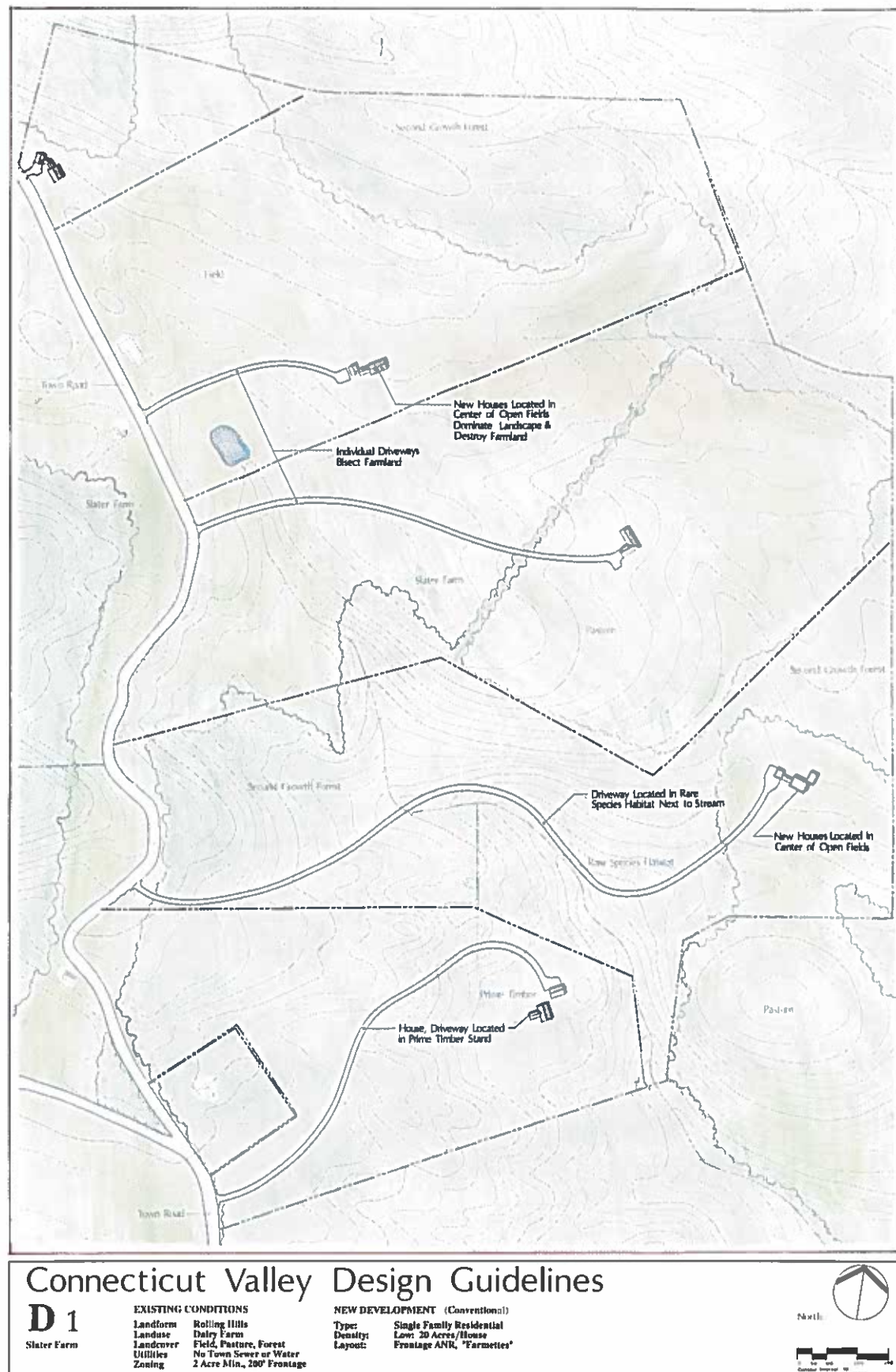
These changes in the architecture of the homes, combined with the modifications in the location of the houses on the land, resulted in a development that not only minimized damage to farmland, scenery and the natural environment, but produced a much more pleasant living environment for the new residents and greatly increased the value of their property. Their new hobby farms were successful because the pastures, meadows, fields and woodlots were preserved as a result of the modifications to the site plan. Instead of looking out their windows at the next house, views of the surrounding fields and woods countryside were preserved. The rare species habitat was protected along the brook while the stand of prime timber was carefully managed to produce renewable yields of valuable lumber through selective cutting. Because of careful site planning encouraged through the site plan review process, the new homes were allowed to blend in with the character of the rural landscape.



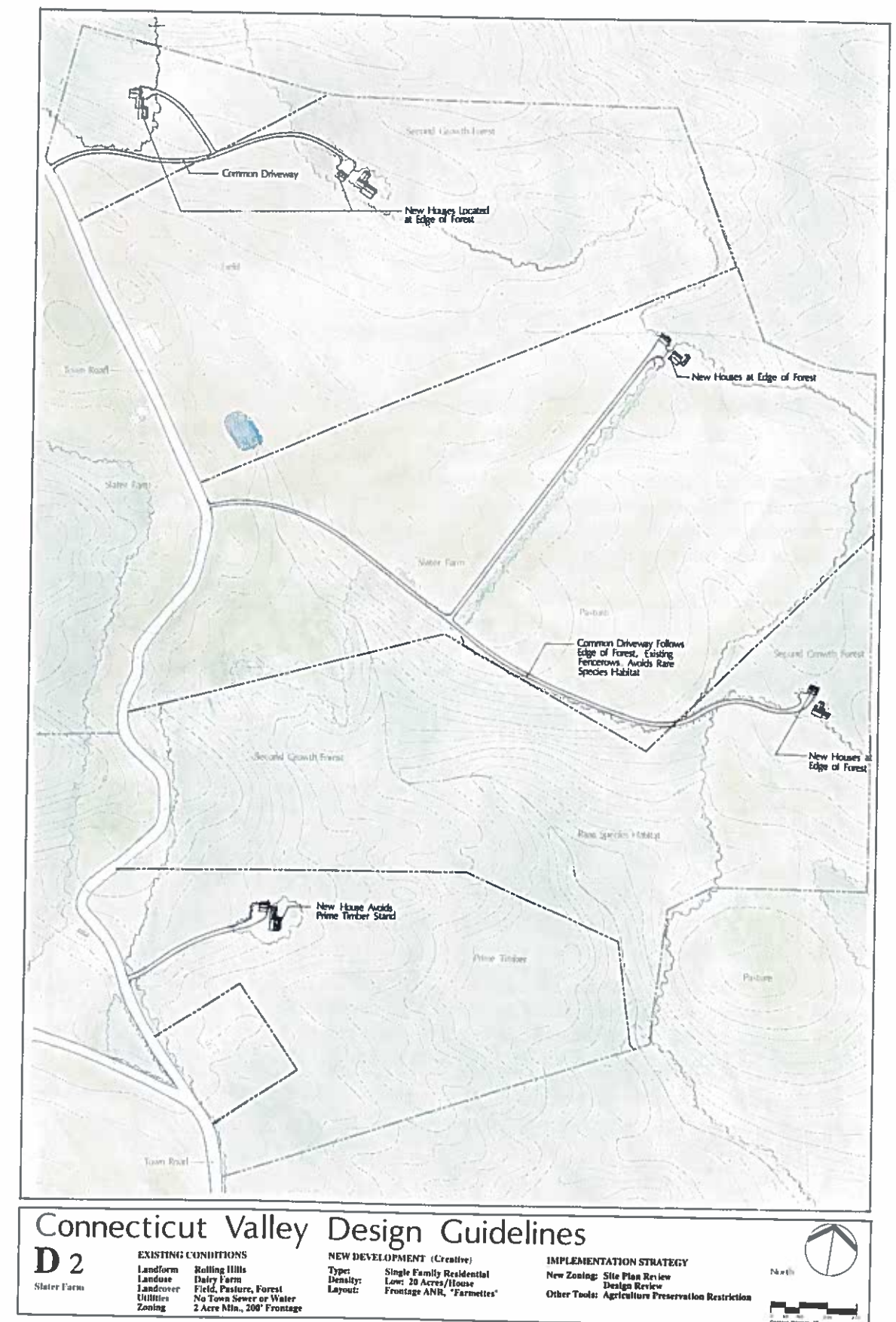
Conway
56



Plan of Site D Before Development



Plan of Site D After Conventional Development



Plan of Site D After Creative Development

Site E: Megamall on State Route 12

1) Existing Conditions

Landform:	Drumlin, Ground Moraine
Landuse:	Dairy Farm, Scattered Residential
Landcover:	Field, Forest, Wetland
Utilities:	Town Sewer & Water Available
Zoning:	Highway Commercial/Industrial

- * Former farm on major state highway owned by realty trust.
- * Prime, scenic farmland zoned for roadside strip development.
- * No zoning controls on parking, signage, lighting, architecture.
- * Rising development pressures make large-scale commercial development imminent.
- * Wetlands occupy southern portion of site.

State Highway 12 traverses an area of rolling farms and woodland between two growing towns in the northern portion of the Connecticut River Valley. A rounded glacial hill (or drumlin) rises in the western portion of the site adjacent to a 70-acre wetland. The undulating terrain of the Valley here is formed by deposits of glacial moraine, and differs from the flatter areas of the alluvial soils found nearer the river, which are generally well drained. By contrast, these upland soils are less permeable and contain extensive areas of wetland. The level, well-drained areas of the site are suitable for the construction of large commercial and industrial facilities.

The State Highway has been a well used overland route between communities for over 300 years. Before European settlement, an Indian path followed the same approximate route, connecting the Connecticut River to the east with hunting grounds in tributary valleys to the west. One of the last of the many farms that were situated along the road in past centuries is located in the eastern portion of the site. Its cornfields, mowings and pastures abut the road for almost a half-mile, alternating with wooded areas and wetlands. Residential housing built in the 1950's lines a town road to the northwest of the site.

State Route 12 has been zoned for commercial/industrial use for over fifteen years. The traditionally slow growth rate of the area, and the site's distance from both towns, has accounted for the lack of development on the site to date. Recent development trends in the region and the increased automobile traffic on the road, resulting from the construction of a nearby interstate highway, now make the site an attractive investment opportunity. Route 12 was recently widened and straightened by the state highway department, further stimulating traffic flow on the road and raising the development potential of adjacent land.

Existing zoning in the town was adopted during the late 1960's, when residents wished to encourage increased local employment and to broaden the town's primarily residential property tax base. A wide variety of commercial and industrial uses are allowed up to a maximum lot coverage of 50%. Virtually no restrictions or controls are placed on parking lot design, signage, lighting, building location or design.

Acme Realty Trust, the development arm of a local real estate entrepreneur, purchased the property shown in the central portion of the site plan in 1978 from a local farmer. Acme expected to resell the site to a major shopping mall developer at a substantial profit, but these plans did not materialize, due to a sluggish real estate market caused by high interest rates and a national recession. During the following decade, while it was waiting for economic conditions in the Valley to improve, Acme leased the fields on the property to the adjacent dairy farm.



Hadley

2) Conventional Development Scenario

- * Regional shopping mall proposed for both sides of Route 12.
- * Block-like buildings set in uninterrupted areas of asphalt parking.
- * Four 200 s.f. illuminated plastic signs located along highway.
- * Fields destroyed, wetlands partially filled.
- * Typical self-service gas station/convenience store located adjacent to mall.

After years of searching, Acme located a developer who was interested in purchasing the property and building a new shopping center. Traffic volume on Route 12, generated by growth in adjacent towns and recent highway expansions, attracted the MegaMall Corporation, developers of shopping centers and roadside commercial facilities.

Given the wide latitude allowed by the town's very basic and brief zoning bylaws, MegaMall used their standard formula for shopping center layout and design. Large expanses of uninterrupted asphalt parking lot were located along both sides of Route 12. With no restrictions on sign size or illumination, MegaMall proposed to announce their presence with four 200 square foot internally illuminated plastic signs at the major entrances to the complex. The developers planned to recycle a building layout and design from a previous project in Connecticut featuring large, monolithic, block-like structures laid out in a line along the rear of the parking lots. High intensity, unshielded sodium vapor lights were proposed atop 50 ft.-high poles to cast a pervasive orange glow over the parking lots at night, spilling over onto neighboring properties and roadways.

The shopping complex north of Route 12 was to be anchored by a large retail clothing outlet and a discount department store. The complex on the south side of the highway was to be anchored by a Super Park-n-Spend supermarket. A self-service gas station and convenience store was planned for the western end of the property. The gas station featured the usual layout: large plastic signs along the road, gasoline pumps and canopy facing the highway, with the store located to the rear of the lot. Several acres of wetland were proposed to be filled and replicated elsewhere on the site. Drainage and runoff from the parking lots was to be channeled into the wetlands.

Aside from the proposed filling of the wetlands, the Planning Board realized that it had little control over the layout of the shopping center, since it conformed to the town's own commercial/industrial zoning bylaws. These by-laws allowed the Planning Board to review certain aspects of the project's engineering, such as storm drainage, road specifications and utilities. But they afforded the town

essentially no control over important site planning considerations, and design and architectural aspects of the project. The town officials were therefore entirely unable to influence the location, configuration, layout and design of the proposed buildings, roads and parking lots on the site, issues that have a profound effect on the environment, character and function of the site and its surroundings.

Local residents became resigned to the transformation of yet another beautiful and unique stretch of Route 12 into a typical shopping center, indistinguishable from nearly identical versions found all across the nation.

3) Creative Development Scenario

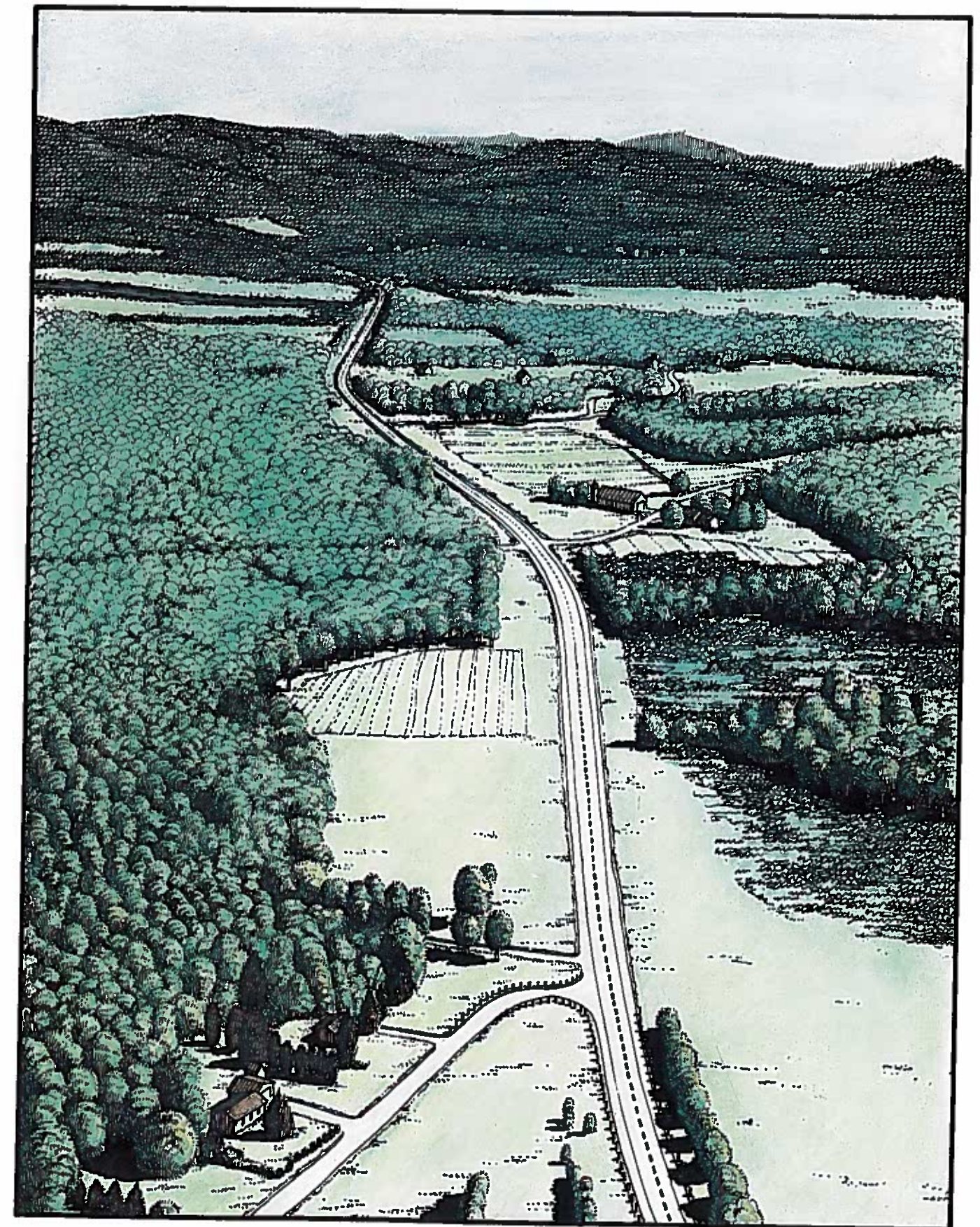
- * Town enacts "Planned Unit Commercial Development" By-law, including site plan review.
- * Mall buildings located in woods at edge of field, parking screened in rear.
- * Signage controls reduce size, visual impact of proposed signs.
- * Proposed lights are shielded, color-corrected metal halide.
- * Architecture of mall, gas station blends in with local character.
- * Fields, wetlands, scenic views preserved.

Motivated by concern about the emerging commercial "strip" along the major highway leading into their town, residents of the community organized an effort to revise the town's zoning by-laws for the commercial/industrial zone, before any large new proposals were submitted. In spite of some initial resistance from owners of existing businesses along the highway (who had at first perceived this as a simple "anti-growth" movement), the effort to revise the by-laws succeeded. Proponents of the changes were able to convince many of the skeptical business owners that managing growth along the highway would eventually benefit all the merchants and store owners, by helping to create a more pleasant and attractive shopping environment.

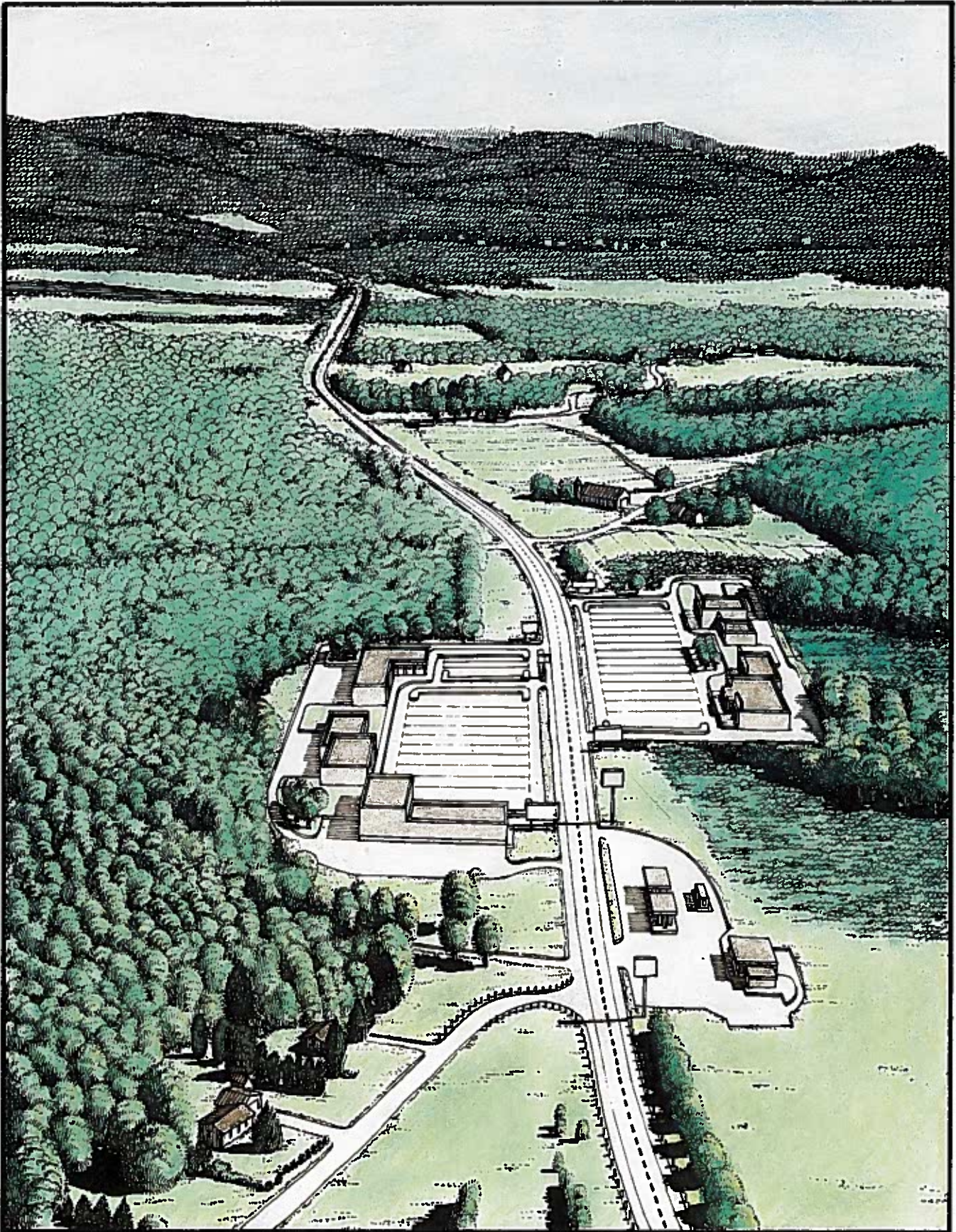
The by-law revisions included a requirement that major commercial developments be reviewed as "Planned Unit Commercial Developments". This amendment relaxed the rigid dimensional requirements of the old by-law, and encouraged flexible, creative site planning solutions tailored to the special requirements and conditions of each particular site. At the same time, the Planned Unit Commercial Development by-law gave the town a greater role in the planning and design of such projects. While applicants were allowed considerably more leeway in planning and laying out their commercial developments, their proposals were required to creatively meet more demanding "performance standards" in the areas of environmental impact, town character, visual quality, traffic and effect upon the surrounding neighborhood. The by-law's intent was to foster creative negotiation between the developers and town boards as they work together to make the project fit the special conditions of the site and the community in which it is proposed.

Procedures for evaluating proposed planned unit commercial developments relied heavily on a "site plan review" process. Site plan review allows town boards to suggest changes and alterations to plans submitted by developers. Plans are reviewed in a consistent and fair manner, relying on clearly defined standards addressing a variety of issues, including building location, parking lot layout, design and screening; lighting, signage, landscape design, architectural design, visual impacts, environmental concerns and traffic flow.

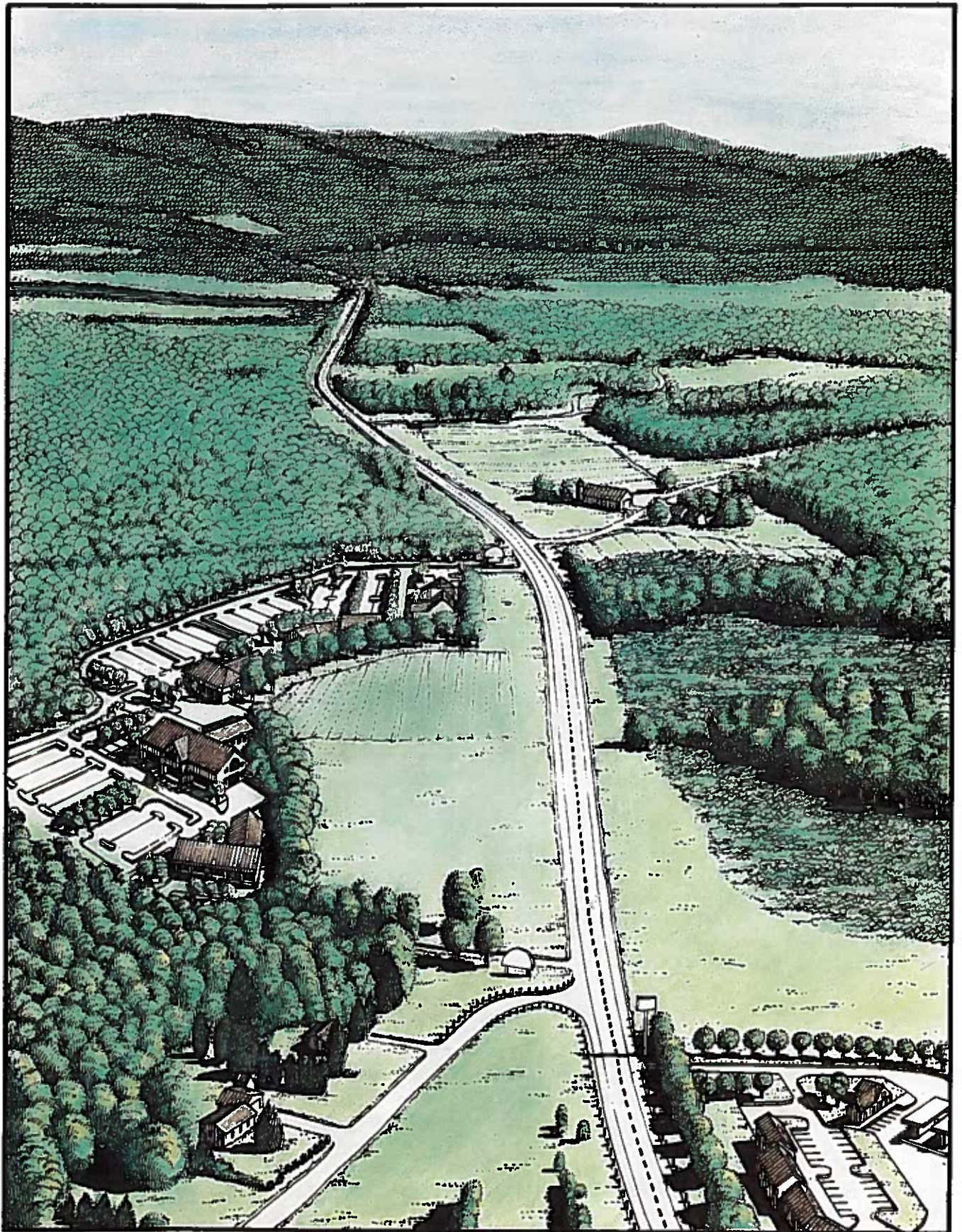
The philosophy underlying these new regulations is that if new, large-scale commercial enterprises wanted the privilege of locating in the community, they would have to be designed in the best, most careful way possible to ensure the future health, environmental and social well-being of the community. Permission to build - and reap the benefits of - a major commercial facility in town would be granted only if careful planning, design and construction practices assured that the new facility would complement, rather than detract from, the community's traditionally rural character.



Aerial View of Site E Before Development



Aerial View of Site E After Conventional Development



Aerial View of Site E After Creative Development

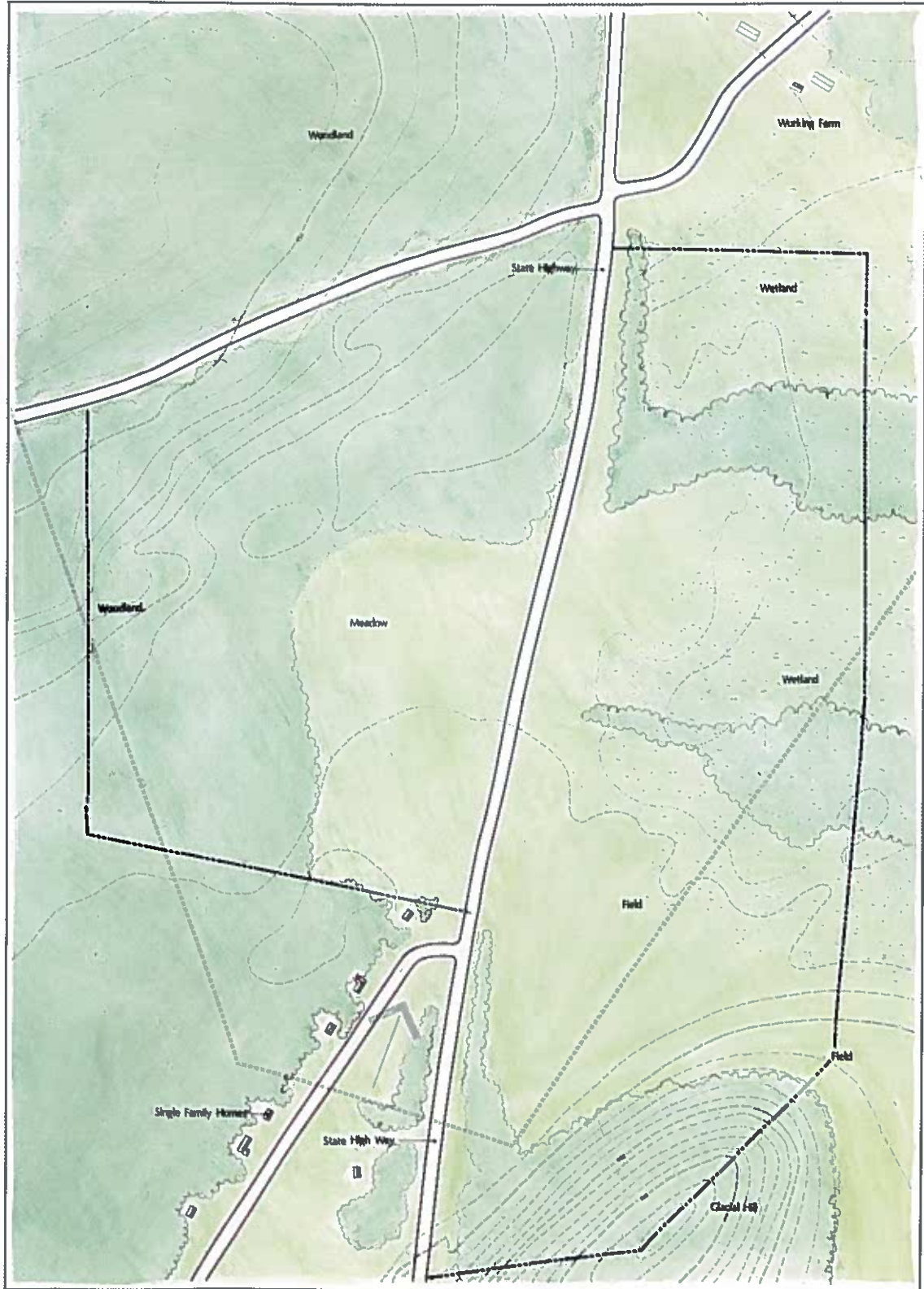
MegaMall Corporation's officers were dismayed by the Town Meeting vote, adopting the new regulations. They had recently purchased the site from Acme Realty Trust and were ready to proceed under the old by-laws. When they began to read the new bylaw, they considered withdrawing from the project. However, Bob Innovatore, a rising star in MegaMall's real estate division, realized that the new zoning could actually help MegaMall produce a much more commercially viable facility. His research had shown the outstanding success of well-planned and designed malls and shopping centers in other parts of the country. He understood the public's growing concern for the quality of the shopping environment, and its disillusionment with the overwhelming uniformity and blandness of many shopping centers. The recent success of festival marketplaces, commercial adaptive reuse of historic structures and environments, and the increasing demand for authentic character, diversity and vitality in commercial environments led him to believe that MegaMall could benefit by a more careful and creative approach on this project.

Bob put together a team of landscape architects, engineers, architects, planners and environmental specialists to redesign the shopping center proposal. They proposed relocating the entire complex on the north side of the highway, to centralize the facility and improve traffic access and circulation. By preserving the existing meadow they buffered the facility from the highway and provided an attractive setting for the stores.

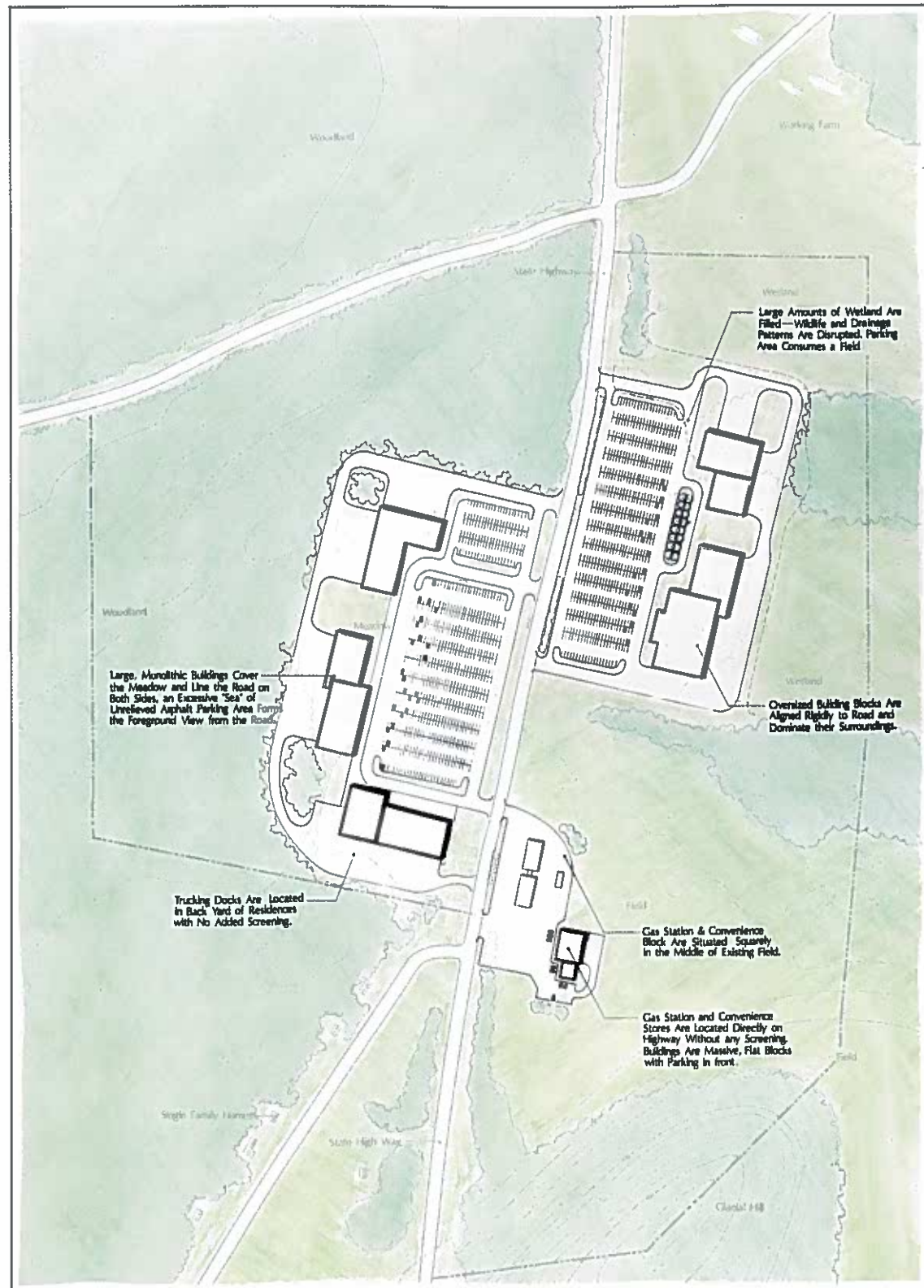
Parking lots were screened to the rear of the buildings, highlighting the facility's attractive architecture and natural setting rather than emphasizing the "sea" of parked cars that provides the foreground view for most conventional shopping centers. A clear but low-key signage system clearly identified the entrances to the complex, leading shoppers to the parking areas along a winding tree-lined road. Generous landscape buffers screened the parking lots from the access road, stores and from the surrounding neighborhood. Attractive, screened, color-corrected lights softly illuminated the parking lots and buildings at night, avoiding the harsh, orange glare typical of most such installations.

The architecture of the shopping center was designed to reflect the commercial buildings traditionally found in the region. Structures were located on the site to fit around the edges of the meadow, leaving a buffer of existing trees along the edge. Fitting the parking and buildings in carefully with natural landforms required greater sensitivity and closer coordination between the landscape architect, architect and engineer, but this effort resulted in a much more efficient and attractive product. Working closely with the real estate department of a major oil company, Bob Innovatore's team produced an improved site plan for the gasoline station/convenience store as well. When the oil company executives saw the plan, they complained that parking and gas pumps located in the rear of the facility would fail to attract as many customers. But Bob showed them perspectives illustrating the clear signage system and pointed out that the vast majority of patrons would be repeat customers familiar with the layout of the gas station. Besides, the oil company didn't have much choice: they were very eager to locate on this highly desirable, potentially lucrative site, and to do so they were required to meet the town's site plan review standards for commercial facilities. The planning board insisted on the preferred layout and even made some helpful additional suggestions of its own that enhanced screening of the facility from the surrounding neighborhood while allowing for increased parking capacity at the same time. Soon after its construction, the success of this innovative gas station exceeded even Bob's expectations. People enjoyed the pleasant, quiet environment of the station and the uninterrupted views out over the unspoiled countryside. The "gourmet gas station" was even written up in Time Magazine, being heralded as the wave of the future in gasoline retailing.

The adjacent dairy farm continued to harvest a bumper crop of hay from the meadow in front of the shopping center. The Park-n-Spend supermarket featured a section for dairy products and produce grown literally on its front doorstep. The store's management and staff prided themselves on the fact that the store had been built while preserving nearby farmland, the ultimate source of the food on its shelves. They used this feature successfully in their marketing campaign, and capitalized in their advertising on the close, symbiotic relationship between the new complex and the character of the Valley.



Plan of Site E Before Development



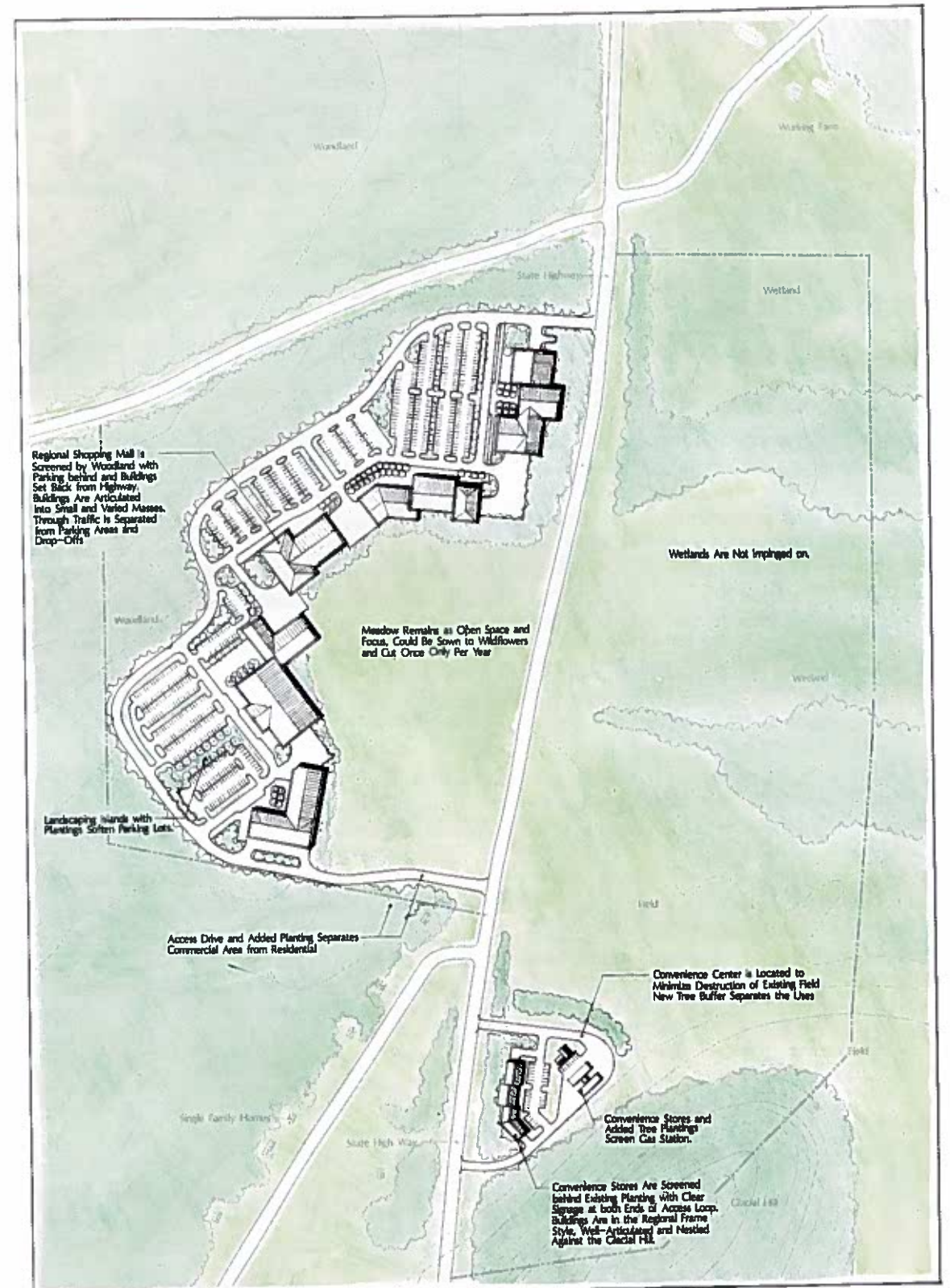
Connecticut Valley Design Guidelines
E 1
 Megamall on State Route 12

EXISTING CONDITIONS		NEW DEVELOPMENT (Conventional)	
Landform:	Drumlin, Ground Moraine	Type:	Regional Shopping Mall
Landcover:	Farming, Scattered Residential	Density:	Very High: 5 Floor Area Ratio (FAR)
Landcover:	Fields, Forest, Wetland	Layout:	Conventional Shopping Mall: Block-Like Buildings Located in the Middle of a Sea of Asphalt Parking
Utilities:	Town Water, Sewer Available		
Zoning:	Commercial/Industrial		

North:

Scale: 0 50 100 Feet

Plan of Site E After Conventional Development



Connecticut Valley Design Guidelines
E 2
 Megamall on State Route 12

EXISTING CONDITIONS		NEW DEVELOPMENT (Creative)		IMPLEMENTATION STRATEGY	
Landform:	Drumlin, Ground Moraine	Type:	Regional Shopping Mall	New Zoning:	Planned Unit Commercial Development
Landcover:	Farming, Scattered Residential	Density:	Very High: 5 Floor Area Ratio (FAR)	Implementation:	Site Plan & Design Review
Landcover:	Fields, Forest, Wetland	Layout:	Mall Set in Woods, Avoiding Farmland, Parking Behind Mall Leaving Roadside Open.	Standards:	Parking Lot Location & Layout Standards, Signage Control
Utilities:	Town Water, Sewer Available				
Zoning:	Commercial/Industrial				

North:

Scale: 0 50 100 Feet

Plan of Site E After Creative Development

Site F: Parker Orchards

1) Existing Conditions

Landform: Rolling Hills
Landuse: Dairy Farm, Apple Orchard
Landcover: Orchard, Field, Forest
Utilities: Town Sewer, No Town Water
Zoning: 1 Acre Minimum, 150 ft. Frontage

- * Parker Orchards: 30 acres of apples, 50 acres of woodland, spectacular views to New Hampshire.
- * Productive, profitable operation needs to expand.
- * Owner wants to buy adjacent land but can't afford local land prices, considering selling & moving to New York State.
- * Dodge Farm: 180-acre dairy operation, owner retiring.

The rolling hill country northwest of the Connecticut River contains some of the best land in the state for growing apples. When the glaciers scoured this corner of Massachusetts, they left deep, well-drained soils on east and southeast sides of many of the higher hills. These fertile soils are now often covered with extensive apple orchards. The orchards are often run in conjunction with dairy farms located on the flatter land between the hills. Though once almost entirely cleared of trees, the steeper, portions of the land have grown back to woodland, providing woodlots for the farms. Rarely visited by the Indians and settled late in the 18th century, this area has maintained a strong agricultural base due to the continued high nationwide demand for quality apples.

This scene contains two large parcels under separate ownership. The Dodge Farm to the northwest is a 180-acre dairy farm. Parker Orchards to the southeast is 30-acre apple orchard with an additional 50 acres in woodland and field.

After 20 years in the business, Bill Dodge is tired of farming, tired of working sixty to eighty hours a week in all kinds of weather for relatively low wages. Cash poor but land rich, he decides it's time to cash in on the value of his land, to help put his children through college and perhaps take his wife on their first real vacation.

Pat Parker, on the other hand, loves being a "pomologist" as she refers to herself in lighter moments, but can't make ends meet with only thirty acres of trees. She would like to purchase a nearby orchard to supplement her own, but cannot afford the asking price. As much as she likes the town she grew up in, she feels the only way to raise the necessary capital is to take advantage of high real estate values in Western Massachusetts and re-invest in a much larger orchard on less expensive land in upper New York State.



Farmland, Shelburne and Colrain

2) Conventional Development Scenario

- * Parker Orchards sold to Vermont ski area developer.
- * Orchard chopped into 40 frontage and subdivision lots.
- * Large, 36'-wide subdivision road bisects orchard.
- * Prominent hilltop developed.
- * Dodge Farm sold to local developer, 47 frontage and subdivision house lots laid out.

After solving a wide variety of problems running the farm, Bill Dodge felt he could subdivide his own property. While his son ran the operation, he hired a local survey and engineering firm, Planimeter Associates, to lay out the proposed development. Planimeter developed a plan that took advantage of Dodge's considerable frontage, creating 29 lots along the town road that bisects his land. They laid out another 18 subdivision lots alongside a proposed new road located in the field behind the farmstead. Their goal was to maximize the number of lots while minimizing site development costs. The plan was developed in strict accordance with all of the town's zoning bylaws and subdivision regulations. It would nevertheless have totally consumed the old Dodge Farm, the only remains of which would have been the original farm buildings surrounded on a 2-acre lot by a grid of formless, suburban tract houses.

Next door, Parker Orchards wasn't faring any better. Resigned to the assumption that development and apples don't mix, Pat Parker sold her entire property to Cutter Development Co., Inc. of Vermont. Spawnd during the heyday of Vermont's ski area development prior to "Act 250", Cutter was looking for a less heavily regulated land development environment, and found it in western Massachusetts.

Residents of the town were appalled by Cutter's proposed site plan for the property. Parker Orchards was chopped into 40 house lots using both existing road frontage and an enormous, 36 ft. wide subdivision road slicing through the upper orchard. Cutter was proud that the few remaining apple trees would become "landscaping" for the new houses.

3) Creative Development Scenario

- * Town adopts "Open Space Development" By-Law.
- * Parker Orchard: development occurs on reduced-width subdivision road in woods.
- * Orchard left intact with 100' wooded buffer to separate houses from orchard.
- * Dodge Farm: cluster subdivision proposed south of road.
- * Frontage development under site plan review north of road preserves fields.

Bill Dodge and many other town residents attended a lecture by Gordon Cabot, a retired land use consultant popular on the local lecture circuit. Cabot's talk convinced Bill that he could develop a portion of his farm without ruining the best agricultural land. Members of the Planning Board were similarly impressed and drafted a set of amended zoning bylaws and subdivision regulations. The amended bylaws included an open space development provision to be mandatory for all critical resource areas in town, including farmland, wetland buffers, prime timber, wildlife habitat, hilltops and historical sites and districts. The open space development provision required clustering of single-family homes on down-sized lots, in order to preserve open space. A site plan review process also provided the town with the means to require modifications in development proposals, to ensure the protection of town character and the environment. The Board proposed modifying the subdivision regulations to reduce required road widths and other excessive site engineering requirements, such as curbs and concrete sidewalks better suited to urban and suburban settings. The Planning Board's recommendations received overwhelming support at town meeting.

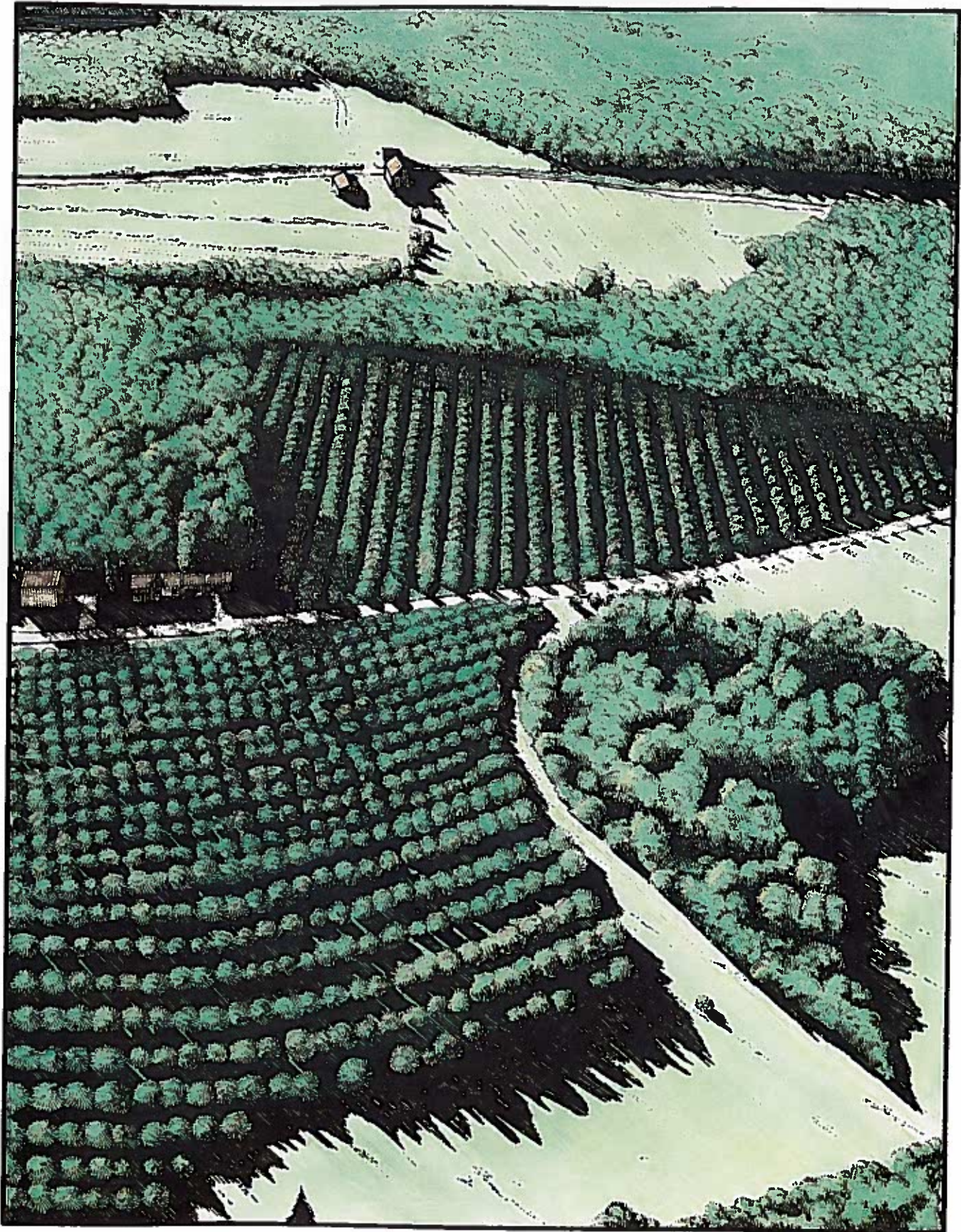
Encouraged by the new bylaws, Bill Dodge decided to change his plans for the property. Planimeter Associates drew up a new proposal featuring the same number of lots arranged in a totally different manner on the land. Frontage lots were laid out with deed restrictions to preserve sensitive portions of

each site, such as wetland buffers, scenic areas and farmland. A "building envelope" was designated on each lot identifying the area within which future houses could be built. Common driveways were laid out wherever possible to minimize visual and environmental impacts, and public access to a favorite swimming hole was preserved through a deed restriction and careful site planning.

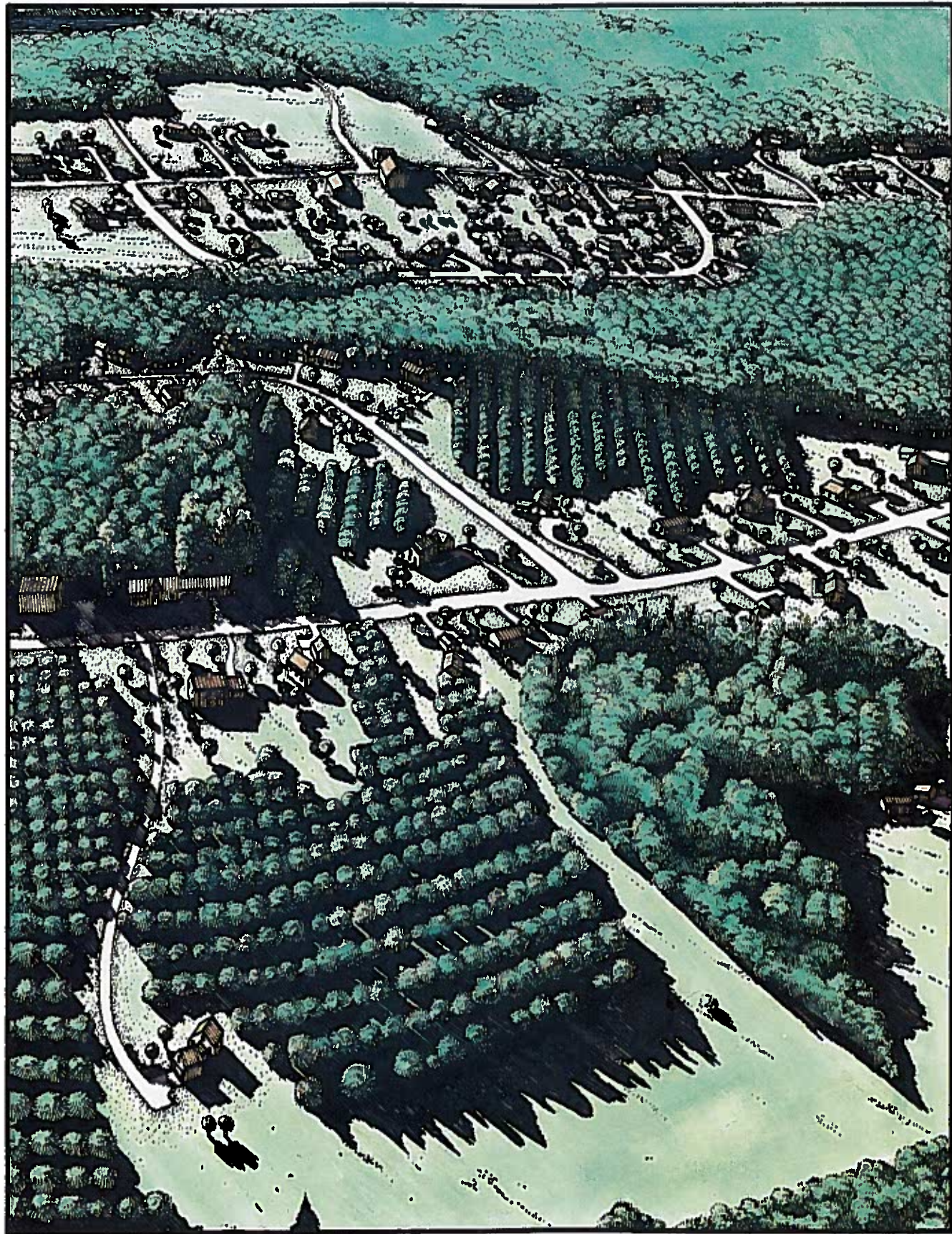
The subdivision road was modified to allow the location of houses in wooded areas, saving the fields from development. A buffer of trees and fencing separated the houses from the farm, minimizing the risk of future interference in the farm operation. A 60-acre stand of old-growth timber slated for destruction in the old plan was preserved by clustering proposed house lots away from this site. The forest was to remain with the rest of the farmland with limited public access provided by an easement. While the subdivision road was longer than originally planned, its width was reduced to 22 ft. and the requirement for curbs and sidewalks was waived, lessening construction costs and minimizing visual and environmental impacts.



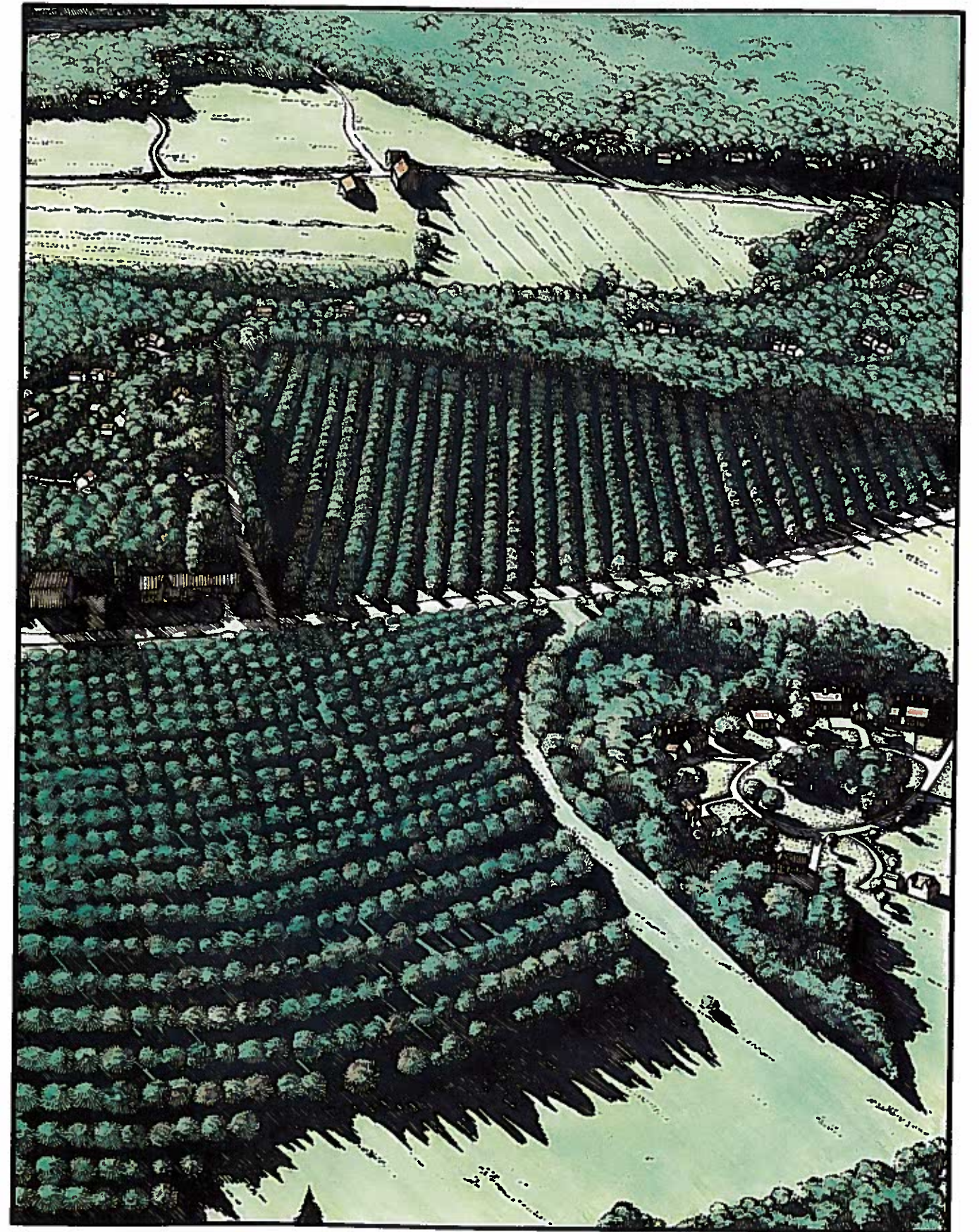
Foothills, Colrain



Aerial View of Site F Before Development



Aerial View of Site F After Conventional Development



Aerial View of Site F After Creative Development

An Agriculture Preservation Restriction (APR) was purchased by the State for the protected farmland, allowing the pastures to be sold well below fair market value to a neighboring farmer eager to expand his dairy operation. The farmer also bought the woodland, under an agreement to log the land only under a selective cutting plan prepared by a licensed forester.

Parker Orchards also benefited from the new zoning bylaws and subdivision regulations. Realizing that the new regulations would allow her to partially develop the property while preserving the orchard, Pat Parker backed out of the deal with Cutter Development. Instead she invested her own funds to hire Country Consultants, a multi-disciplinary firm of engineers, foresters, landscape architects and planners. They developed plans for the site based on the town's new bylaws, which would preserve the most important features of the site while accommodating the same amount of development proposed by Cutter.

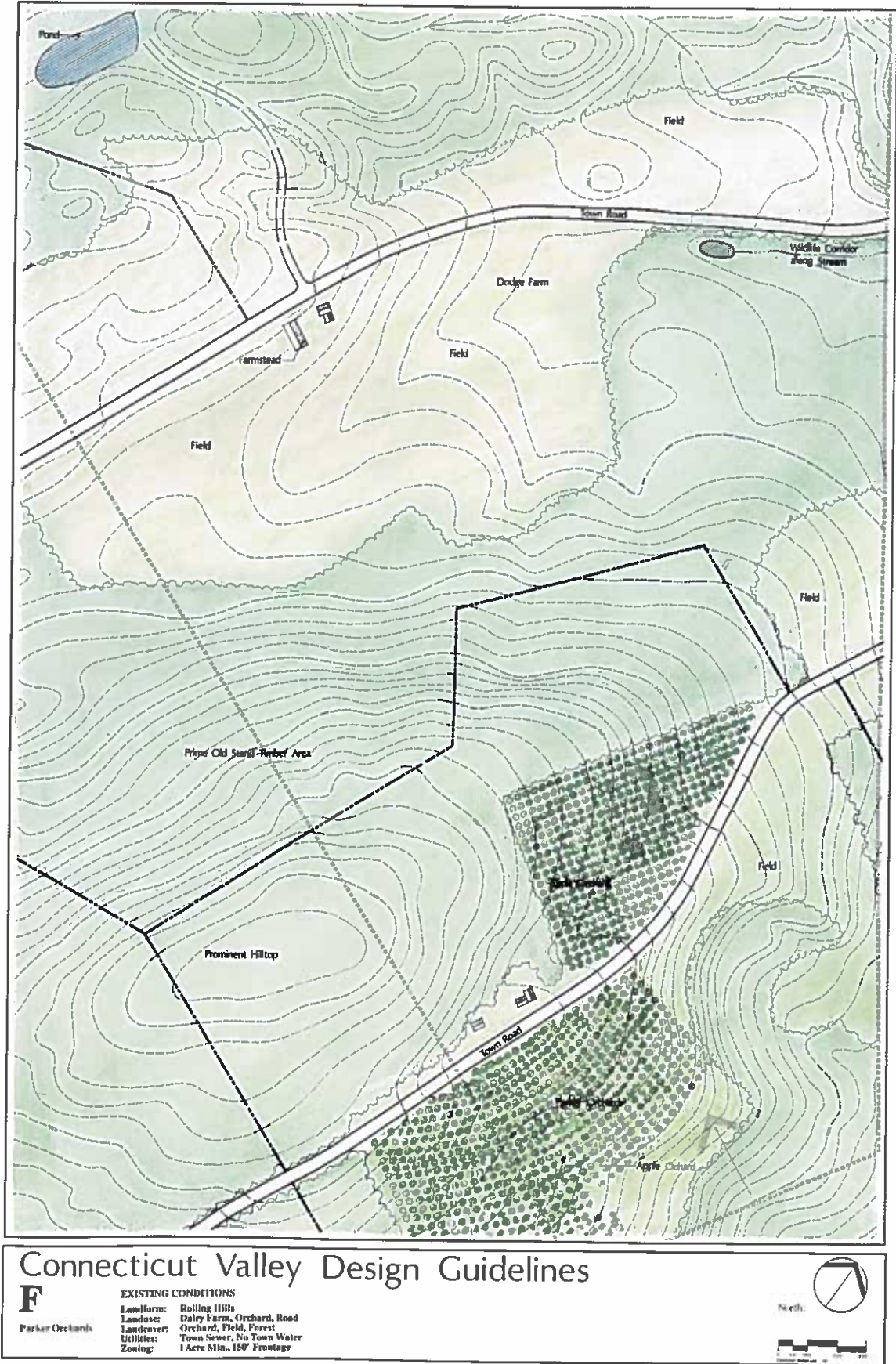
The plan kept all the proposed development away from the apple orchard with a 150 ft. woodland buffer separating the two. This was established to avoid the inevitable complaints about noise and spraying from future residents of the houses, many of whom would be former urbanites unaware of the nature and requirements of operating a successful commercial apple orchard.

The Town's new Farmland/Open Space Conservation and Development Bylaw allowed much greater flexibility in the location of lots and structures on the land. Country Consultants were able to fit the smaller lots into less sensitive portions of the site, while providing each new house with access to unspoiled sections of the property. North of the town road they laid out a 24-lot subdivision on a new 22 ft. wide road built through the woods. South of the town road, they located 14 single family residences on smaller half-acre lots oriented around a central common.

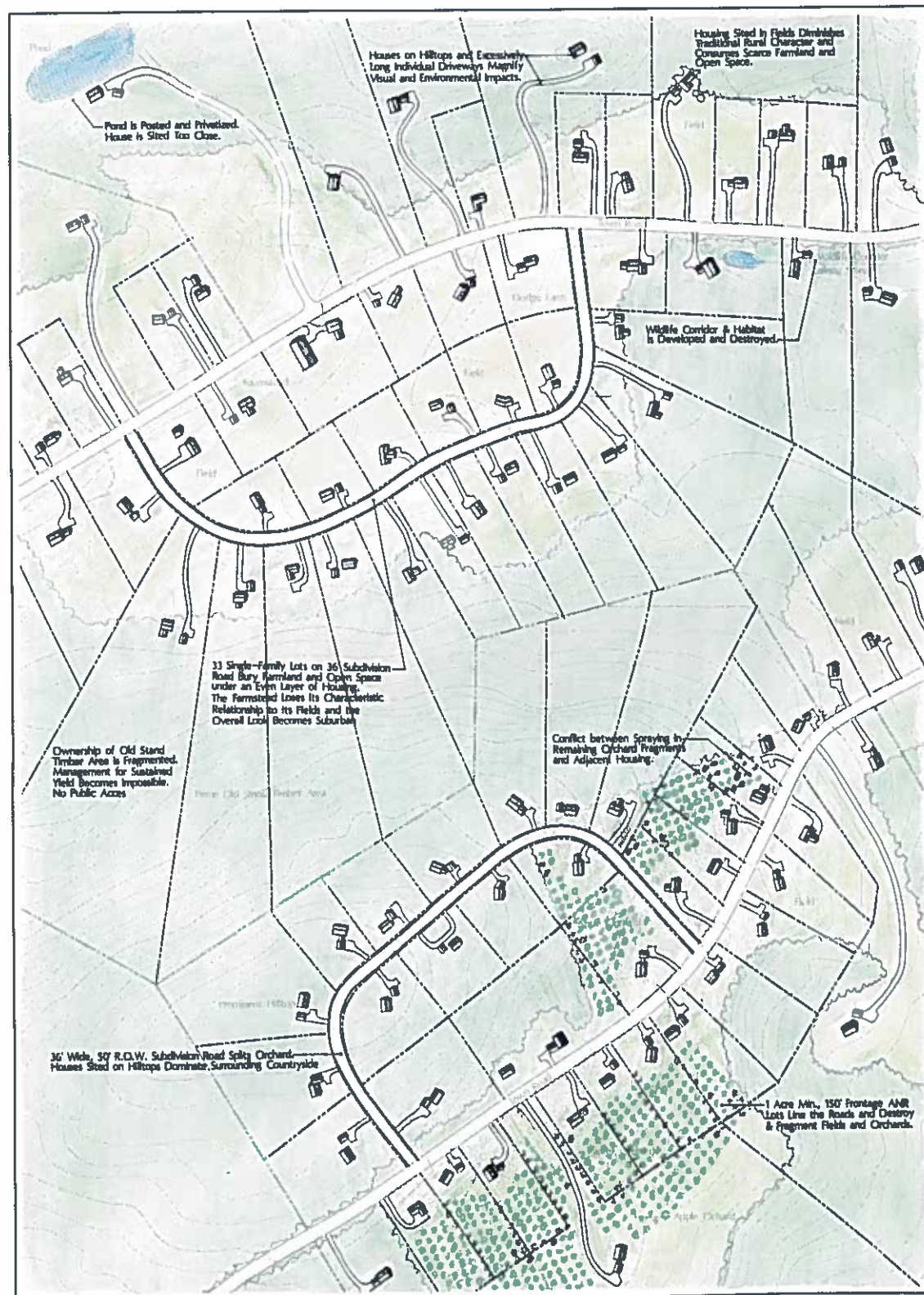
After requiring minor additional modifications through the site plan review process to assure adequate septic system designs, the Planning Board approved the proposal. Pat Parker sold the approved lots to two developers who financed the construction of the roads and site amenities and contracted out the construction of the homes to individual local builders. The income from the sale of part of her land allowed Pat to maintain ownership of the orchard and purchase the neighboring orchard to expand her operation. With the funds left over, she invested in new buildings and equipment to modernize her facilities, experiment with new varieties and improve her marketing. Some of her best customers were her new next-door neighbors who enjoyed living near some of the best apples - and scenery - in the state.



Whately



Plan of Site F Before Development



Connecticut Valley Design Guidelines

F 1

Parker Orchards

EXISTING CONDITIONS

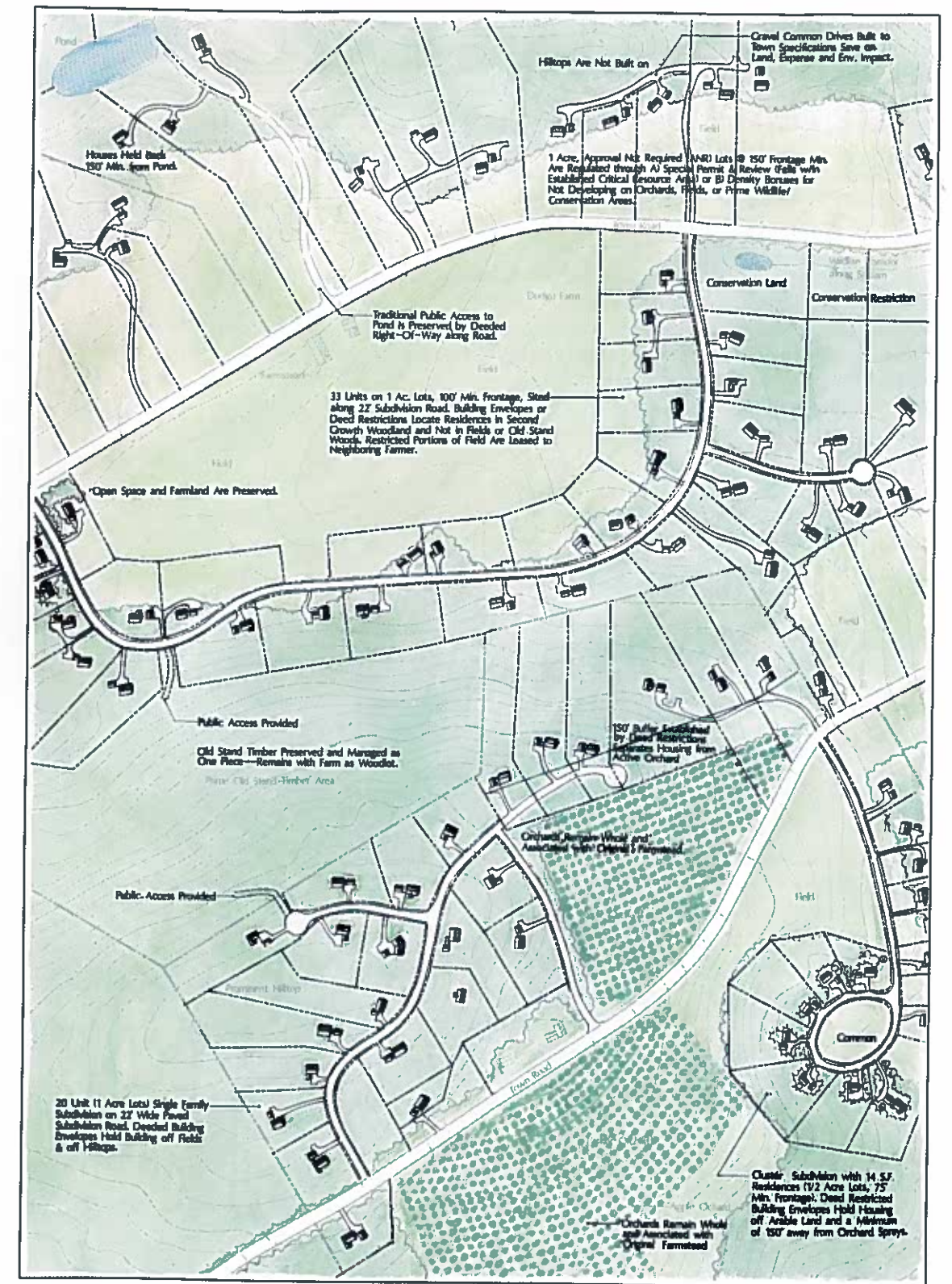
Landform: Rolling Hills
Landuse: Dairy Farm, Orchard, Road
Landcover: Orchard, Field, Forest
Utilities: Town Sewer, No Town Water
Zoning: 1 Acre Min., 150' Frontage

NEW DEVELOPMENT (Conventional)

Type: Single Family Residential Detached
Density: Moderate 3 Acres/House
Layout: Large Lot Frontage ANR



Plan of Site F After Conventional Development



Connecticut Valley Design Guidelines

F 2

Parker Orchards

EXISTING CONDITIONS

Landform: Rolling Hills
Landuse: Dairy Farm, Orchard, Road
Landcover: Orchard, Field, Forest
Utilities: Town Sewer, No Town Water
Zoning: 1 Acre Min., 150' Frontage

NEW DEVELOPMENT

Type: Single Family Residential Detached
Density: Moderate 3 Acres/House
Layout: Frontage: 1/2 Acre, Shared Drives
Cluster Subdivisions: 1/2 Acre Lots



Plan of Site F After Creative Development

Site G: Emery Farm

1) Existing Conditions:

Landform:	Edge of Valley
Landuse:	Dairy Farm
Landcover:	Pasture, Orchard, Forest, Lake
Utilities:	Town Sewer & Water Available
Zoning:	Multi-Family, 12 Units/Acre

- * Large, financially troubled dairy farm on scenic, rolling hillside adjacent to millpond.
- * Town roads at the east and west ends of the property.
- * 18th century farmstead with numerous barns and out-buildings located on town road.
- * Densely wooded hillside, clusters of trees along farm roads and along lakeshore.
- * Hillside orchard at eastern end of property.
- * Historic 18th century farm landscape.
- * Dramatic views from fields over valley to distant hills.



Fields along river, Gill

This site is typical of the transition zone between the flat, bottom land of the Connecticut Valley and the surrounding hills. Gently rolling farmland of this type occurs around the periphery of the ancient glacial Lake Hitchcock. Streams in these areas were often dammed for waterpower during the last century, creating small ponds and lakes that remain today. Farmland typically occupies the lower elevations of this zone, while the steeper hillsides are generally forested. Opportunities for the placement of sensitive development generally occur at mid-slope, in the transition area between farmland and forest.

This 130-acre dairy farm is bounded to the east and west by two town roads. To the north, a wooded hillside rises to a summit just beyond the property line, and a large pond forms the southern boundary. The dairy farmstead and 65 acres of crop and pasture land are situated on gently sloping land to the north of the pond. A 26-acre orchard occupies the eastern edge of the property, located on a ridge overlooking the lake. Another 40 acres lies in woodland on gently rising slopes, at the northern end of the property.

Before European settlement, this land was entirely wooded. A small stream flowed where the lake presently exists. Native Americans used this land primarily for hunting. The first farm on this site was established during the early years of the 18th century, and within fifty years most of the property had been cleared for cropland or pasture, with only an occasional small woodlot remaining on the steepest or wettest portions of the site. During the mid-19th century, the steeper hillside pastures were abandoned and reverted to second-growth forest.

2) Conventional Development Scenario

- * Large apartment blocks freely placed over farmland.
- * Excessively wide, straight access roads with no relationship to topography and landscape.
- * Historic farmstead demolished.
- * New landscaping out of scale and inappropriate to natural character of the area.
- * Development adjacent to lake causing visual, environmental degradation.
- * Parking highly visible.

Franklin Emery was a tenth generation Yankee farmer whose ancestors had settled the farm over 200 years before. In spite of difficult economic times, Emery declined several offers to sell his land for development. But when he died in 1982, none of the dozen family members with an interest in the property had remained in the area, and few felt an attachment to the land. Disposition of the property was put in the hands of Rebecca Carver, the family lawyer and executor of Emery's estate. Emery's descendants instructed attorney Carver to sell the property for its "highest and best use", based on local market forces and whatever the town's zoning bylaws would allow.

Because the land was located within fifteen minutes of a major university, "highest and best use" in the case of the farm meant multi-family rental apartments for college students and faculty. Action Realty Trust, a local developer, purchased the property and hired Gridiron, Inc. engineering and architectural consultants, to design 24 apartment buildings for the 130-acre site.

Gridiron drew up plans for the complex based on the town's current zoning by-law and subdivision regulations, which listed multi-family apartment buildings as a use allowed in the area by Special Permit. The town's regulations specified maximum density of development, standards for streets and other site improvements, maximum building heights and external dimensions. However the regulations made no mention of the preservation of open space, farmland or rural character, the placement of buildings on the land, or of suggested architectural treatment.

Gridiron's plan for the property complied with all of the town's dimensional requirements. Its development plan located the 24 buildings in the fields adjacent to the lake, where the units were the easiest and least expensive to build, and where they would enjoy views of the pond. The buildings were patterned on a standard apartment design drawn by Gridiron for a previous project in another part of



Hatfield

the state. The site plan featured a very wide access road bisecting the site from east to west across the former farmland. The proposed landscaping consisted of a wide variety of non-native species (such as junipers and rhododendrons) arranged geometrically along roadways and adjacent to the apartment buildings.

The Action/Gridiron proposal for the property generated considerable local opposition but, since it conformed fully with the town's regulations, the Planning Board was reluctant to deny the application. Even though most of the opposition really stemmed from concern for preservation of the rural character of the site and town, opponents attacked the proposal on specific, technical grounds such as width of streets and increased traffic. By making slight modifications to the proposal, such as widening the streets from 28 to 32 feet and improving a difficult intersection, the developers were able to de-fuse most of the local opposition. Because of the way the by-laws were written, the town boards and concerned citizens had no means of influencing and modifying the basic layout, design and configuration of the development. They could only quibble over minor details of the proposal or attempt to stop it based on narrow technical issues which could be easily addressed by the developers.

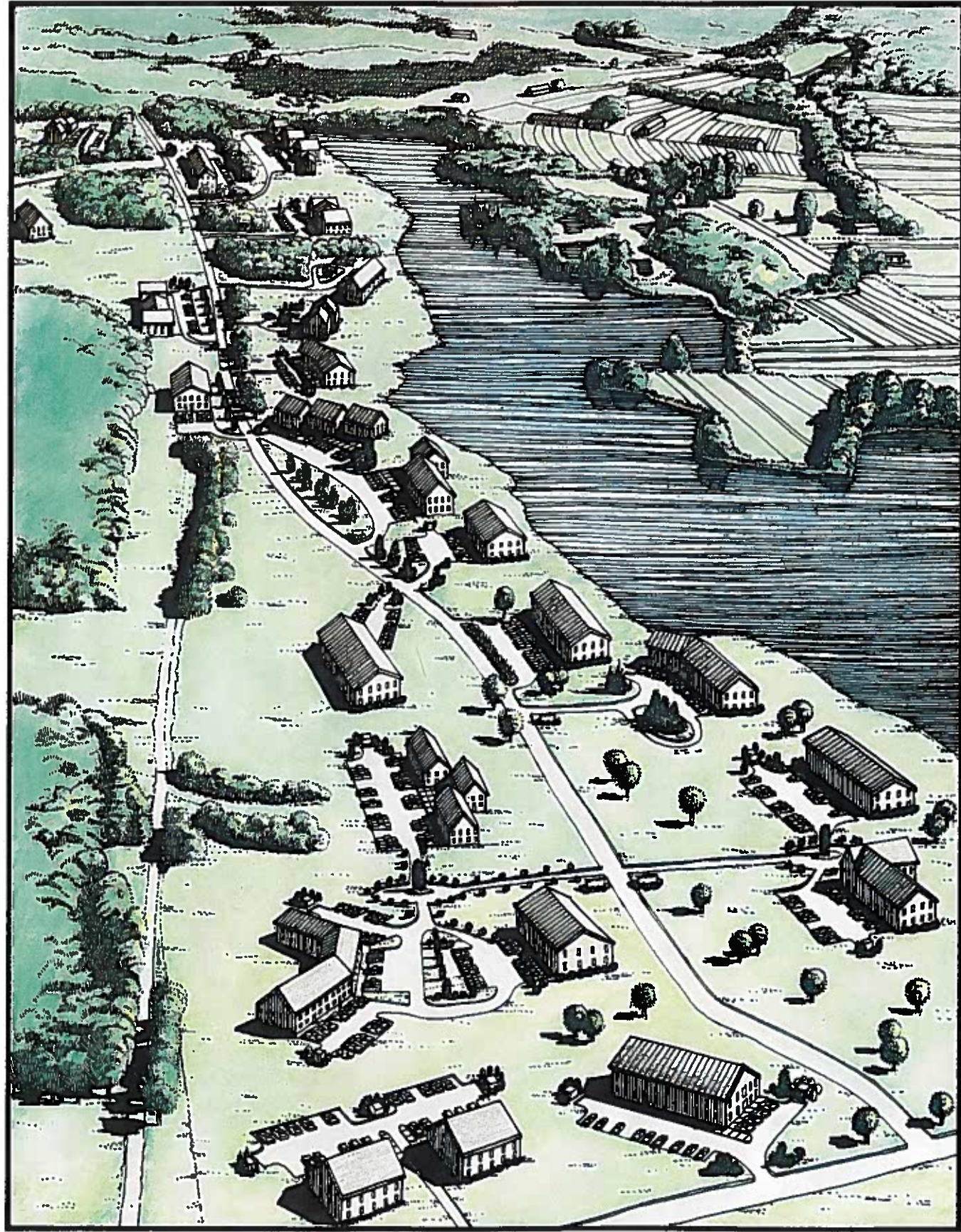
3) Creative Development Scenario

- * Apartments contained in smaller-scale, varied, attached units sited in woods adjacent to farmland.
- * Architecture providing variations in scale, sense of privacy, ease of access and screened parking.
- * All units having views over preserved farmland and pond, increasing their value and marketability.
- * New, moderately wide access road winding through woods, responding to site topography.
- * Existing historic farmstead restored and sold as a single family residence.

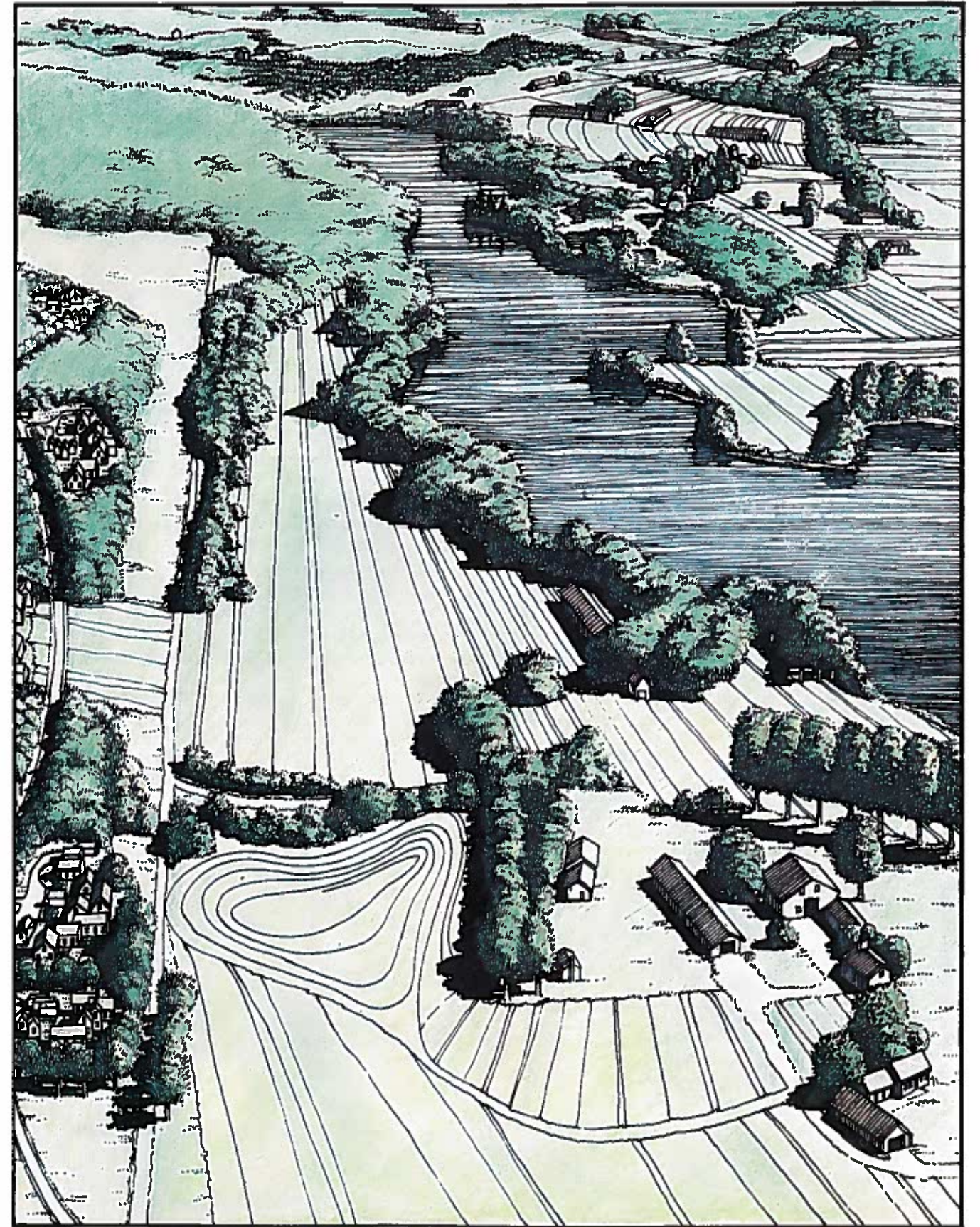
Concerned by the impending Action/Gridiron apartment complex scenario, an overwhelming majority of town residents voted at town meeting to amend their zoning by-laws and subdivision regulations. While some residents were opposed to all forms of multi-family housing, others felt the need to address the high demand for affordable housing both from local residents and the nearby student population. After much debate, the new regulations continued to allow multi-family housing, but only through a



Aerial View of Site G Before Development



Aerial View of Site G After Conventional Development



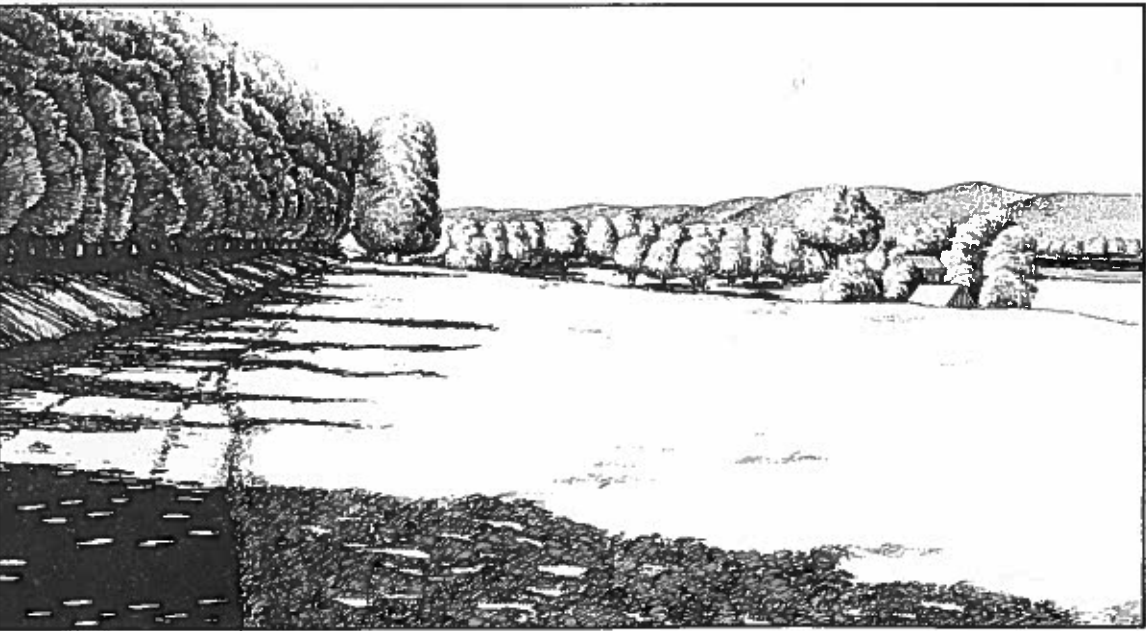
Aerial View of Site G After Creative Development

Special Permit requiring "Site Plan Review" to control the layout of the development and to ensure that the architecture will harmonize with the character of the town, through the by-law's design guidelines. The new regulations required grouping of units to minimize impacts on farmland and sensitive areas, preservation of town character, architectural designs compatible with the town's more traditional buildings, siting of structures and roads to blend in with the landscape, and reduction of unnecessarily severe engineering standards for road widths, drainage and other site improvements.

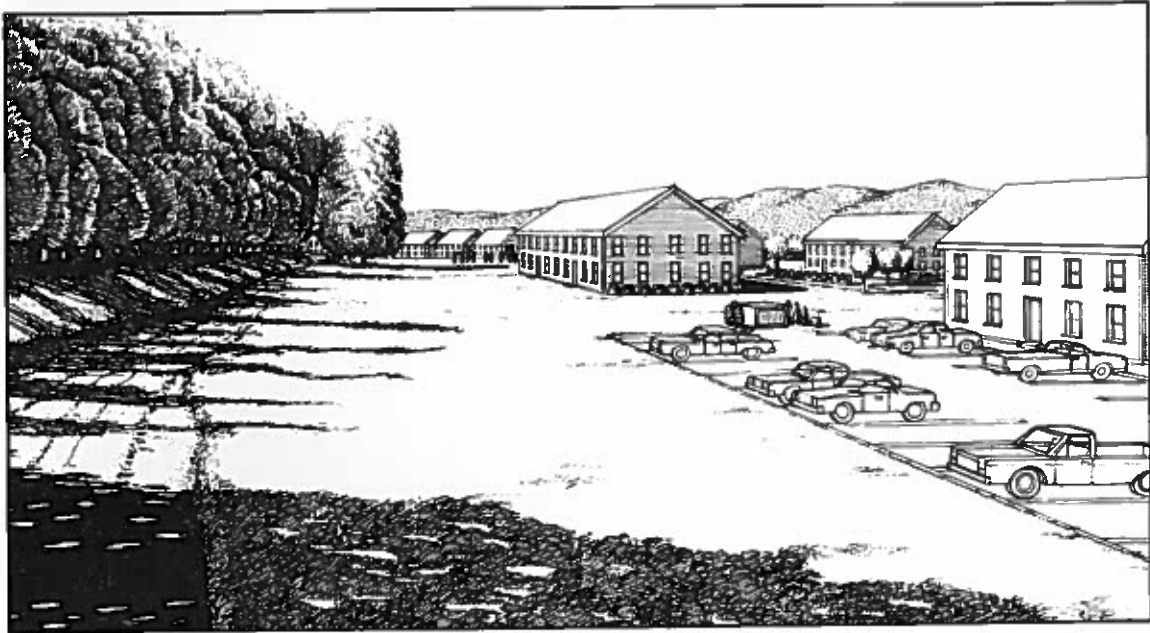
Frustrated by the town's opposition, Action sold the property to another developer, who had identified a market for moderately-priced rental units for local residents, and who were also interested in finding a way to fit the development more sensitively on the site. LandDesigners, Inc., a local multi-disciplinary firm of landscape architects, engineers, planners and architects, were retained to draw new plans for the project.

Working within the town's revised regulations, LandDesigners relocated the 24 apartment buildings to the field edges at the base of the hillside. The previous, large, block-like structures were replaced with a greater number of smaller traditionally-inspired buildings which varied to fit the contours of the landscape. The new apartments featured more steeply pitched roofs, varied height and massing, local building materials and traditional fenestration. Parking was carefully laid out behind the buildings in small, distinct lots which blended in with the topography and offered convenient access to the units. Free-standing garages were used to provide privacy between entrance ways and to add additional architectural diversity to the development.

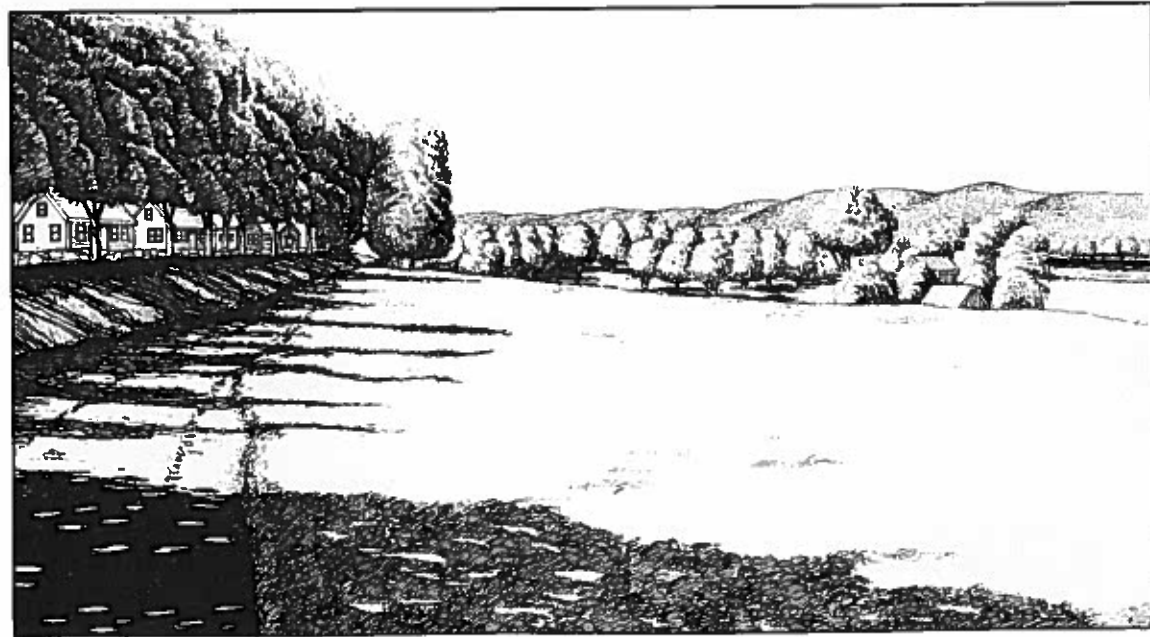
By siting the new development at the edge of the woods, the farmland and orchard were able to be preserved. In return for a substantial tax deduction, the developer donated a conservation restriction on the farmland to a local conservation land trust, which entered into a long-term lease with a young farmer who wished to expand his dairy and apple operation. Access to the farmland by apartment residents was controlled by fencing and a firm no trespassing policy, though public access to the waterfront was provided along a specific path system along the edge of the fields and orchard. The presence of the preserved farmland and unspoiled lake frontage greatly increased the rentability of the apartments, since most units offered screened views through the trees out over the protected cropland, across the open fields and undeveloped shoreline, to the water.



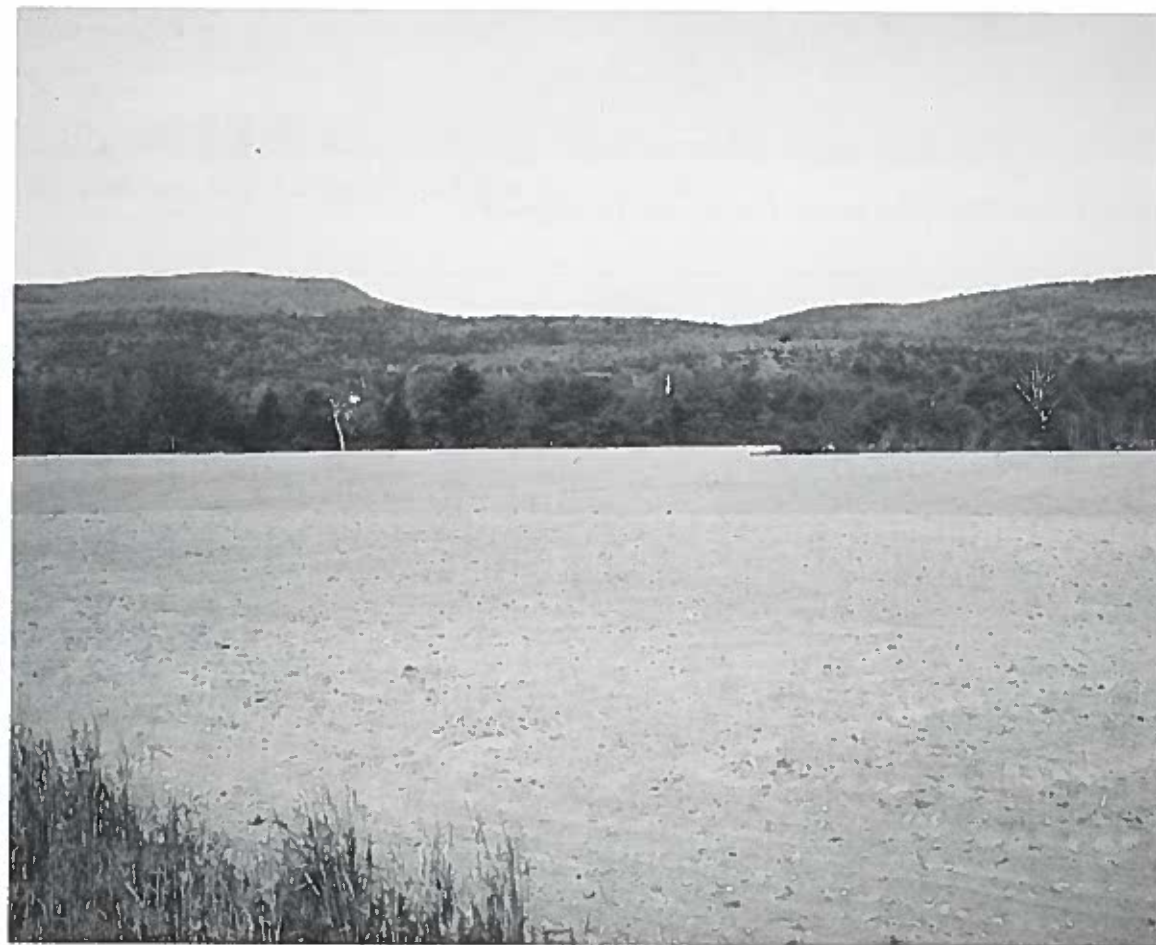
Ground Level View of Site G Before Development



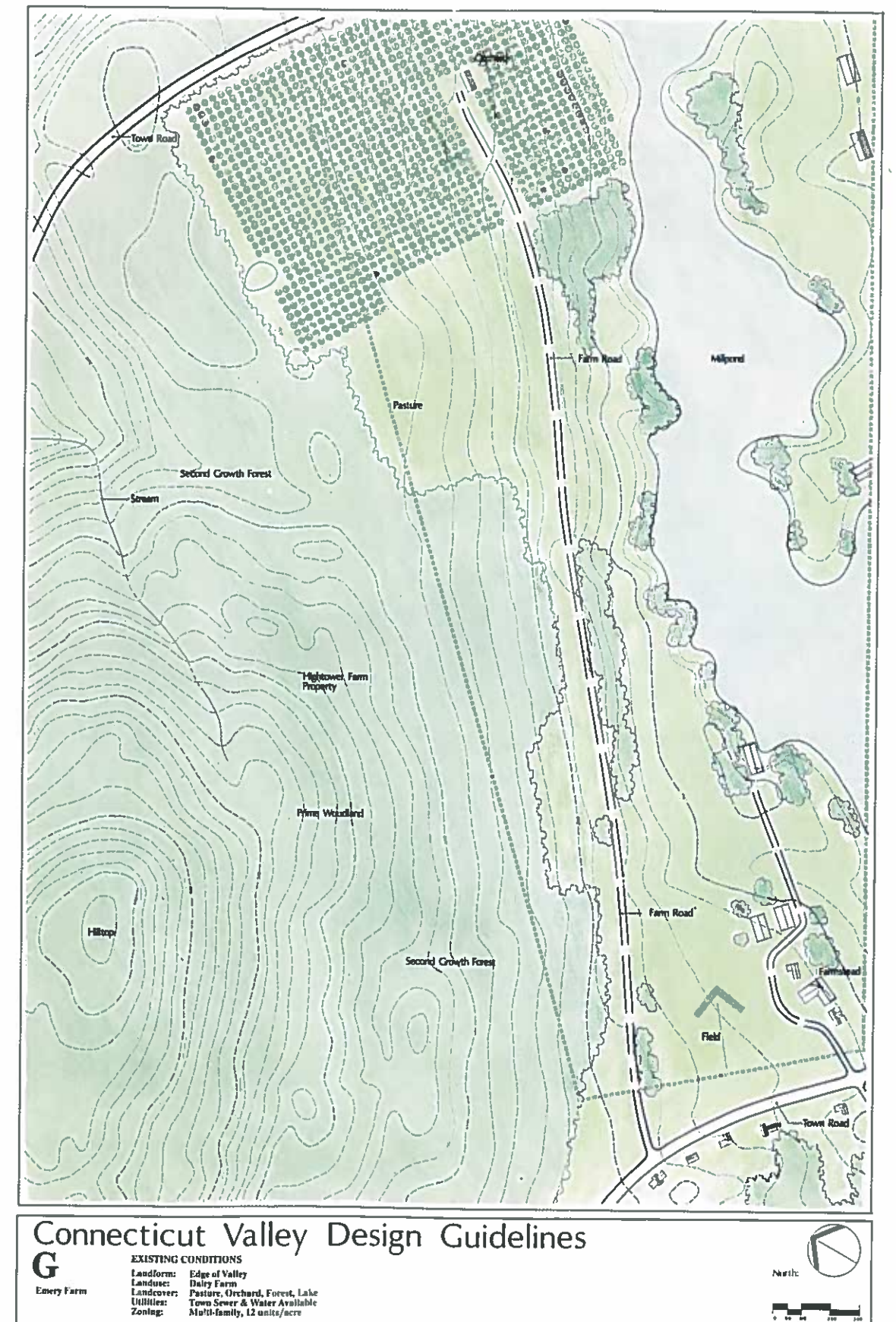
Ground Level View of Site G After Conventional Development



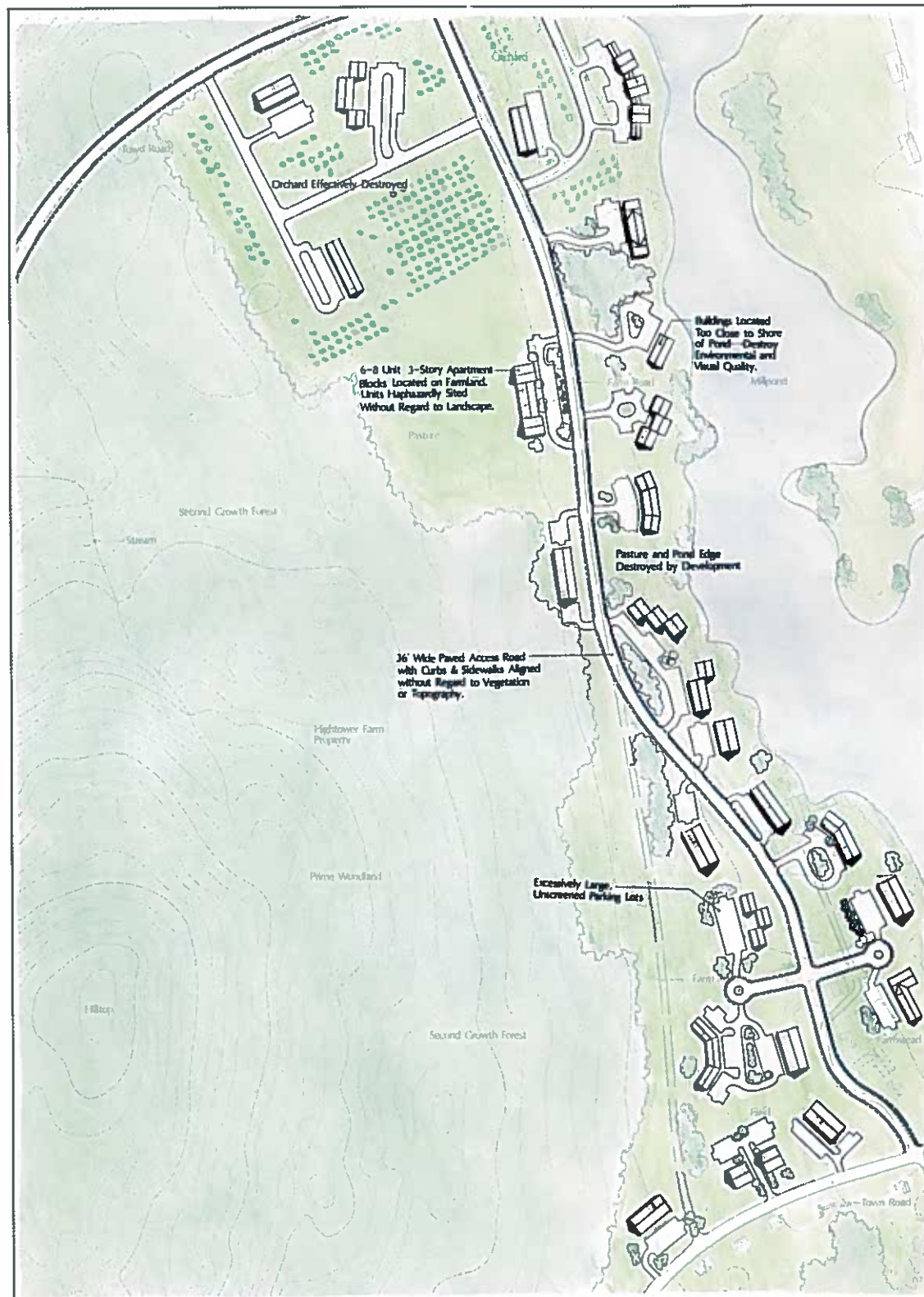
Ground Level View of Site G After Creative Development



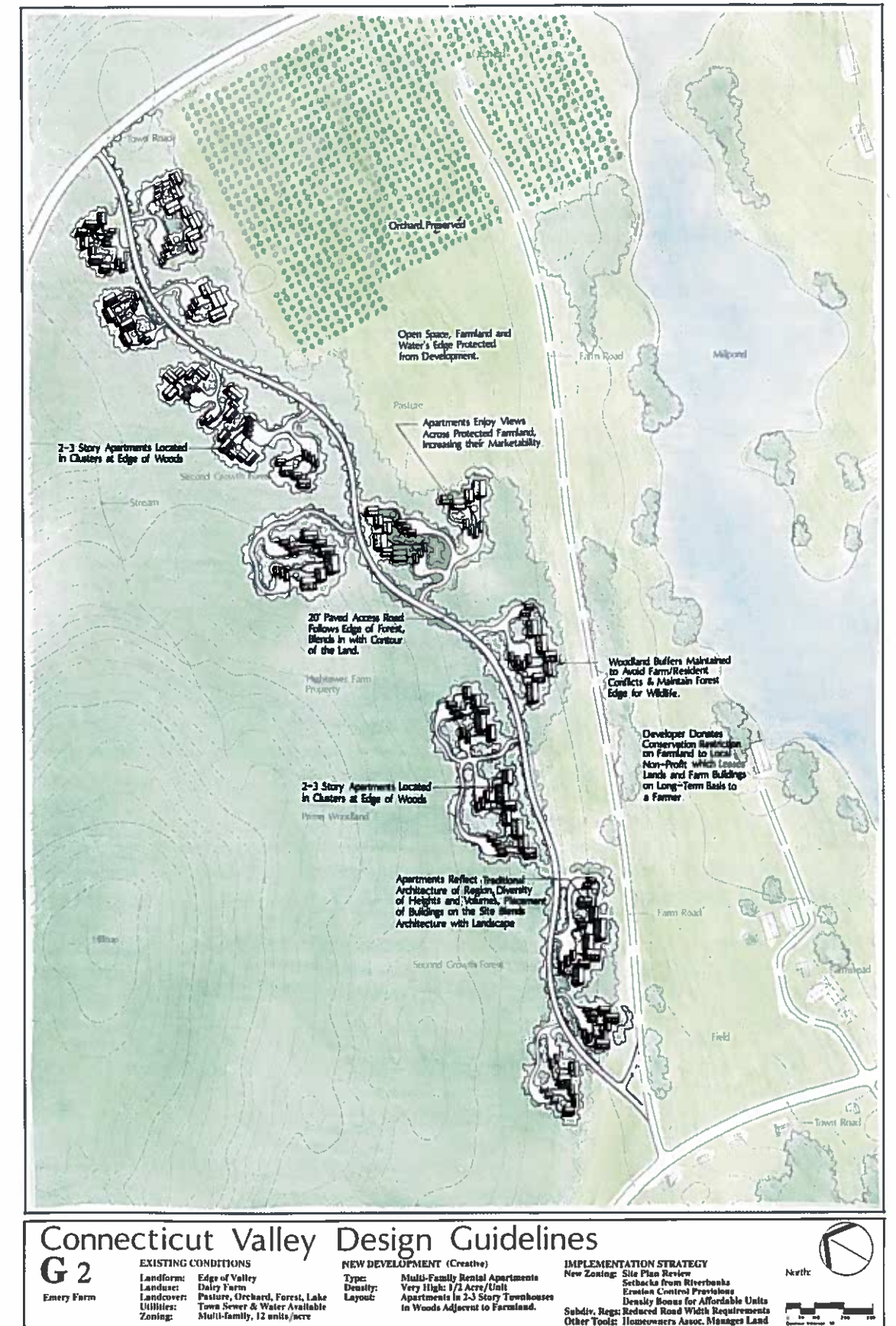
Connecticut Valley Bottom Land



Plan of Site G Before Development



Plan of Site G After Conventional Development



Plan of Site G After Creative Development

**Site H: Foster Simmons’
Golden Goose**

1) Existing Conditions

Landform:	Sand Plain/Ravine
Landuse:	Forestry, Major State Highway
Landcover:	Forest, Road, River
Utilities:	Town Sewer, Water Available
Zoning:	Highway Commercial

- * Flat, wooded, undeveloped tract, 3,000’ frontage on major state highway.
- * Rising development pressure for tourist-oriented commercial development.
- * Area zoned "Highway Commercial" & "Multi-family Residential".
- * Owner has recently retired to Florida, wants to sell to highest bidder.
- * Property includes steep, scenic gorge with rare species habitat.

Though the Connecticut River typically meanders across a broad flat flood plain in Massachusetts, it occasionally flows through narrow gorges cut over the ages through solid bedrock. In this location, the Connecticut has eroded a gorge over 120 feet deep, spanned by the bridge of a major state highway. Although the gorge itself is formed of bedrock, the flatter slopes of the upland east of the river consist of a deep, sandy plain deposited 10,000 years ago by a glacial tributary stream flowing into the Connecticut from the west. This stream carried large quantities of sand and fine gravel in its rushing waters, and unloaded this material as it entered the ancient glacial Lake Hitchcock, whose shores existed along the western edge of this site. Most of the sand plain east of the river is therefore very easy to build on, though the highly permeable sandy soil makes the area especially susceptible to groundwater contamination.

West of the river, the bedrock gorge leads up beyond the sand plain deposits, to heavier (glacial till) soils typical of the upland areas that flank the Connecticut River Valley. These are more fertile and hold moisture better than the droughty soils of the sandplain. A dairy farm survives here, located on a scenic peninsula overlooking the Connecticut and a tributary river.

Because of very dry sandplain soils, vegetation on most of the site east of the river consists of pitch pine, white pine and other drought-tolerant species. This land was briefly farmed during the eighteenth century, but was soon abandoned due to its lack of fertility and dryness. Its primary use since then has been as a source of pine timber.

The steep, shady slopes of the river gorge, on the other hand, support a dense growth of northern hardwoods including beech, birch and maple. Views from both sides of the bridge to distant hills and fields are some of the most spectacular in Massachusetts, and each year attract thousands of visitors.

Though it is located on a major state highway, the site, until recently, was too remote to attract development interest. Several years ago, however, the town extended sewer and water lines past the property, greatly increasing its development potential. The burgeoning strip of commercial and tourist-related facilities along the highway on the outskirts of the town is gradually approaching this site.

The town’s existing zoning designates the area adjacent to the road "Highway Commercial", while land to the northeast is designated "Multi-Family". Few controls exist on the form or pattern of development in either zone, beyond the requirement that commercial lots have at least 200 ft. frontage on the highway and occupy at least two acres. No local zoning mechanisms exist to control lighting, signage, parking, access to the highway, planting or building design. Unless changes are made in the bylaws, future commercial development on this property will most likely resemble a typical highway strip.

The major landholding on the site is an 80-acre parcel belonging to Foster Simmons, a native of the town who recently retired to Florida. Foster inherited the property from his father in the 1950’s, and aside from occasionally selling logging rights, he scarcely dealt with the wood-lot during his 30-year ownership. After retiring to Florida, he was eager to sell the land as soon as possible.

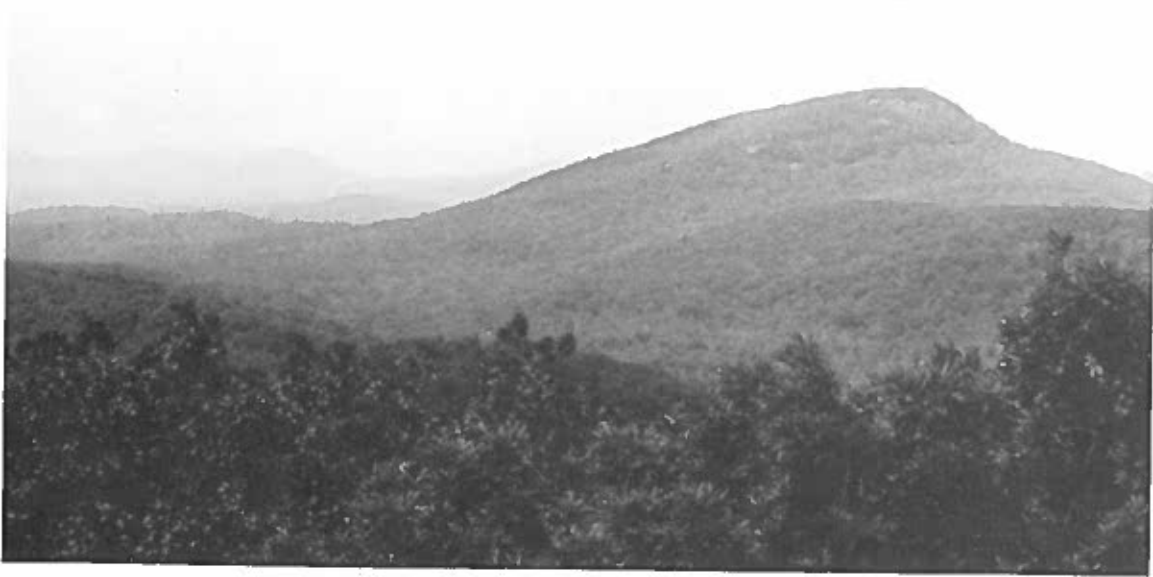
2) Conventional Development Scenario

- * Commercial frontage lots sold for roadside strip development.
- * Multi-family condos sited on bluff overlooking river.
- * Banks of gorge clearcut to provide views for condos.
- * Poorly sited and designed roadside tourist development destroys tourist potential of area.
- * Numerous curb cuts to new development creates a highway safety hazard.

Foster was surprised and delighted by the appraiser’s estimate of the value of his property. Land he had thought to be of little worth had risen sharply in value due to the extension of the sewer and water lines, the increased growth in the region, and the growing demand for roadside commercial sites.

He placed the entire parcel on the market at a price he considered exorbitant and soon received an offer from a land speculator. After completion of the sale, the new owner divided the roadside frontage in the Highway Commercial zone into seven commercial lots, ranging in size from 2 to 8 acres. The back land remained as a single 50-acre parcel suitable for multifamily development under the town’s zoning bylaws. The speculator’s plan was drawn up by a well-regarded surveying and engineering firm, and easily satisfied the small number of requirements in the town’s very basic zoning by-law. Because the lots met the town’s frontage requirements, the proposal was determined not to require planning board approval under the state’s zoning enabling legislation, thus further reducing the planning board’s ability to manage future development on the site.

Within a year the speculator had sold all his roadside commercial lots to a variety of businesses seeking highway locations. The buyers included several tourist-related businesses attracted to the site by the growing traffic volume, generated in part by the region’s increasing reputation as a scenic, unspoiled



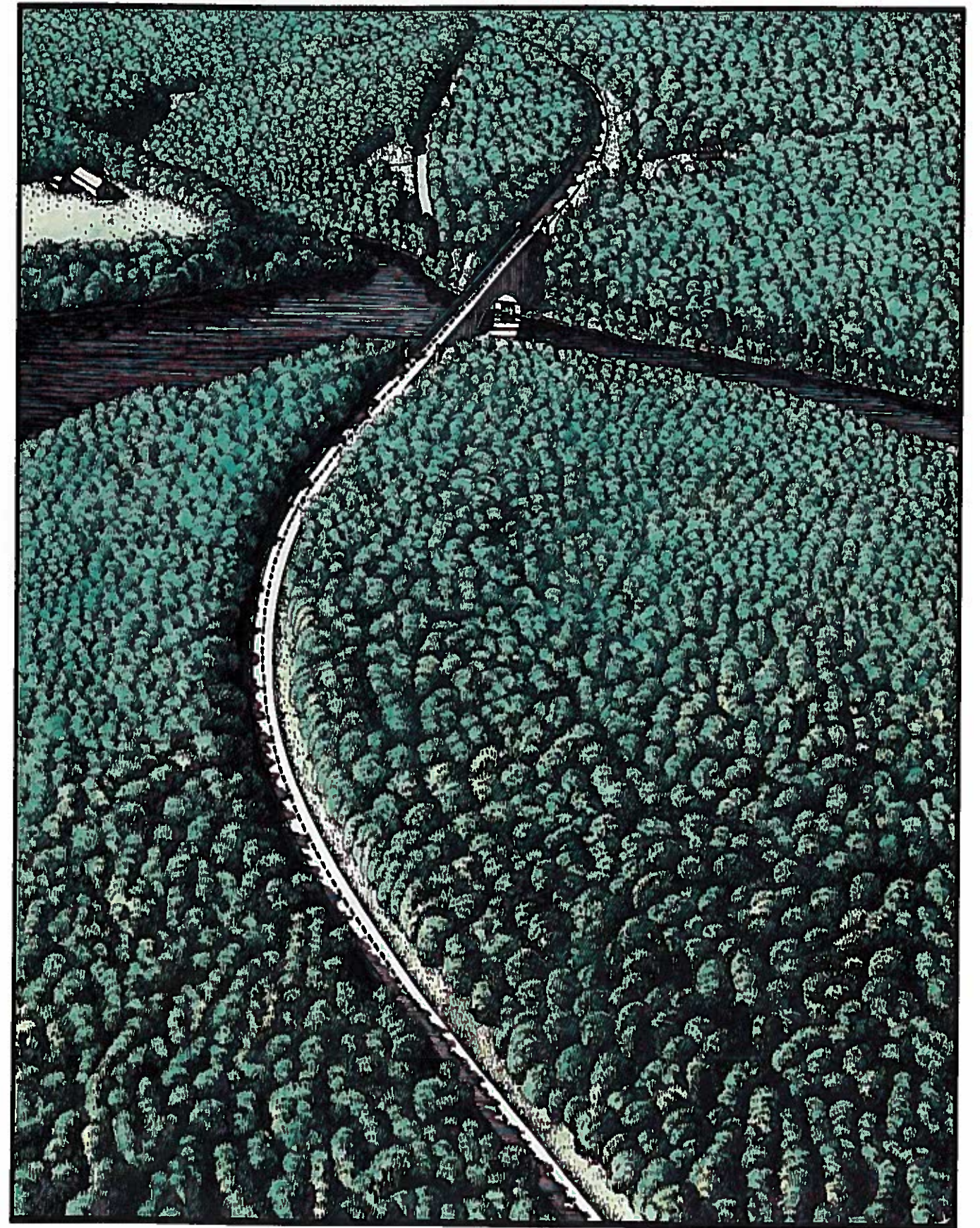
Holyoke Range



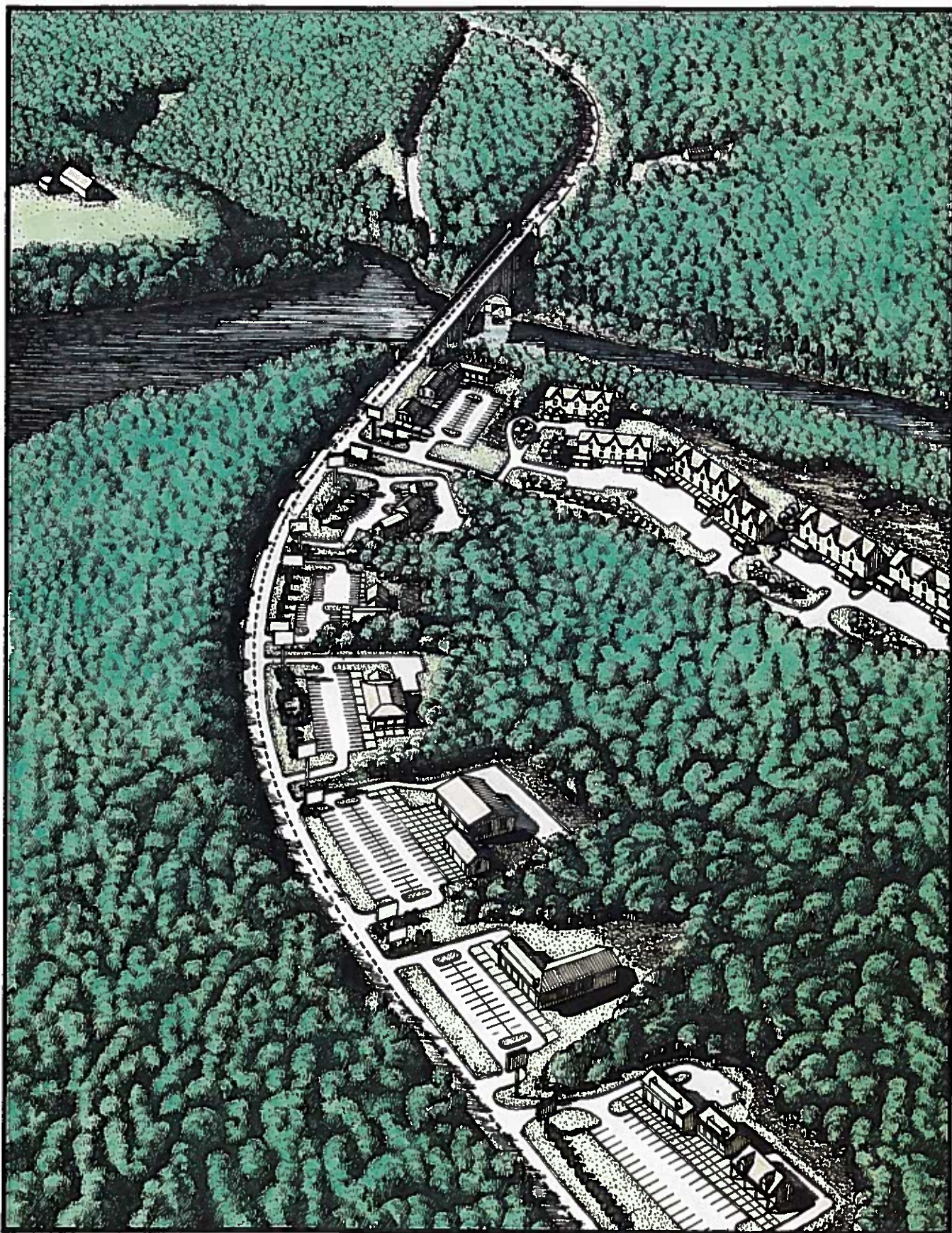
Erving

section of New England, and by the spectacular views available from the nearby bridge. After construction of the new businesses, however, the area had lost much of its rural character, resembling a typical highway strip located in Anywhere, USA. A chaotic mix of oversized plastic signs and overhead utility wires destroyed the former beauty of the roadway. Large, unbroken expanses of asphalt paving lined the highway, leading up to bland, box-like commercial buildings with more large signs affixed to their walls and roofs. Increased tourism failed to materialize, due in part to the scenic highway's character transformation, caused by this particularly unscenic roadside development. Eventually several of the businesses closed or relocated leaving vacant, vandalized buildings along the highway.

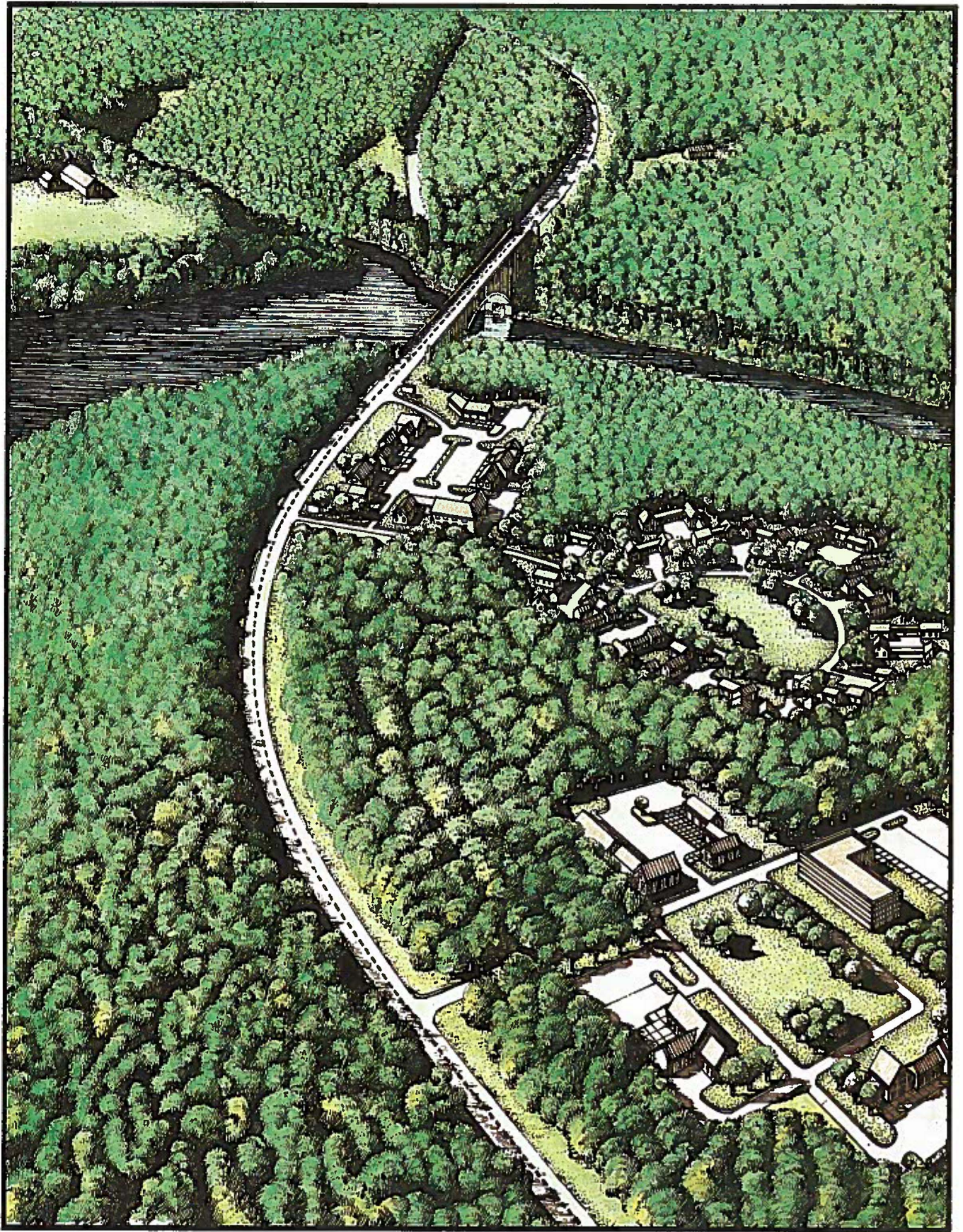
The 50-acre lot was purchased by a developer of condominiums attracted by the site's spectacular views overlooking Connecticut River gorge. He built 40 3-bedroom units located in six block-like structures located in a line on top of the bluff adjacent to the river. Large swaths of the forest growing on the sides of the gorge were cut down to create views for the units, causing erosion on the steep slopes, damaging critical wildlife habitat and spoiling the famous view from the bridge. The buildings were located at random, amidst a "sea" of asphalt parking lots. Trash dumpsters and sodium vapor spotlights mounted on telephone poles provided the only relief to the bituminous front yards of the multifamily housing.



Aerial View of Site H Before Development



Aerial View of Site H After Conventional Development



Aerial View of Site H After Creative Development

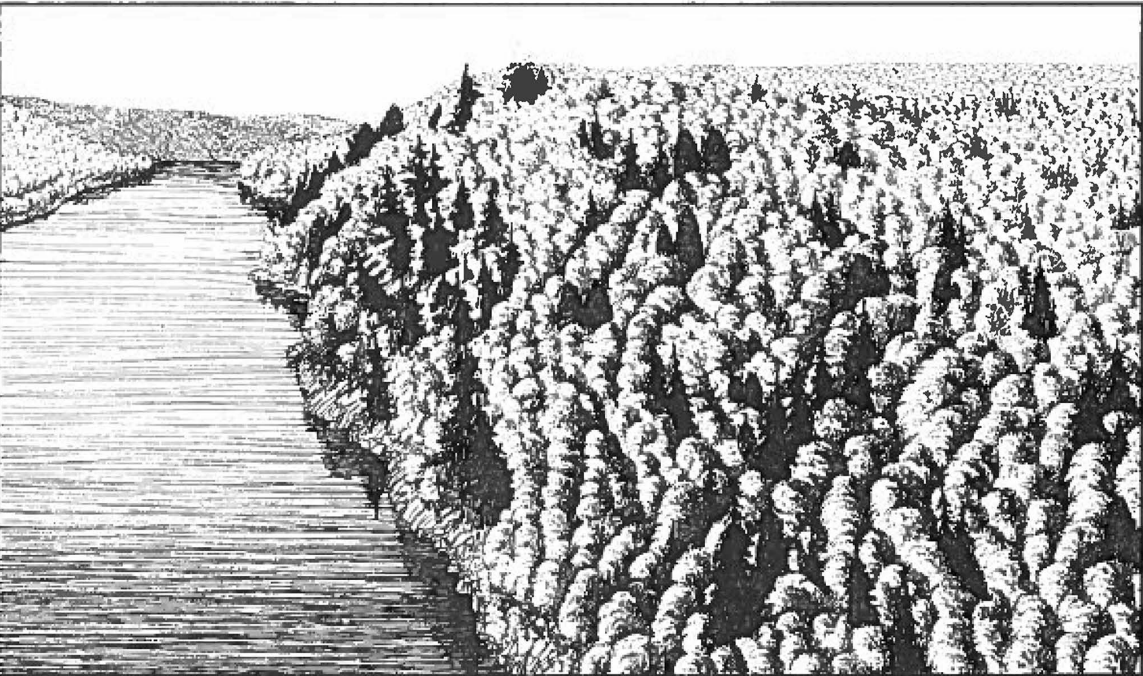
3) Creative Development Scenario

- * Tourist commercial node located adjacent to highway. Parking screened in rear, attractive architecture forms strong edge along road.
- * A second commercial node set back in woods around central open space.
- * Reduced number of curb cuts, clear signage improve safety.
- * Over 3/4 of roadside woodland preserved by clustering commercial development.
- * Multi-family condos clustered away from sensitive gorge area around central common.

Astounded by the high appraised value of his property, Foster Simmons realized he needed to plan the sale of his property carefully to maximize the value of his investment. He had been impressed by a recent article he had read in *Developer's Journal*, entitled "Killing the Goose that Laid the Golden Egg". The article included numerous case studies demonstrating how poorly planned and designed development hurts tourism-related businesses by destroying the very amenity that attracts tourists in the first place. The article convinced Foster that well planned and designed development on the site could more than double the value of his current investment in the land. While his primary concern was financial, he also realized that proposing quality development on the site would benefit the town he had lived in for so long.

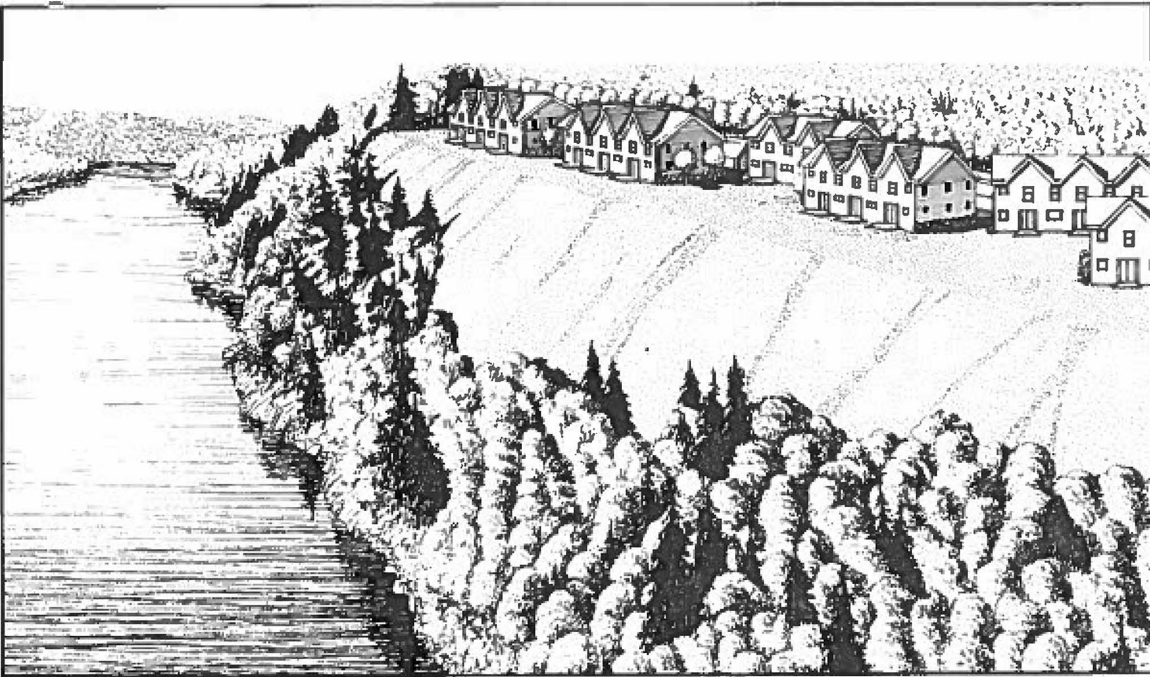
Instead of selling the land to the highest available bidder, Foster actively sought the interest of qualified developers with solid track records in the type of project he envisioned for the site. He felt it was important to avoid piecemeal development of the property by a variety of builders, seeking instead a single developer to manage the project. Like most people in the area, he initially disliked "developers", but soon realized that a conscientious developer was greatly preferable to a land speculator. Unlike the speculator, the careful developer becomes closely involved in building on the site, ensuring that new development is comprehensively planned and carefully designed to blend in with its natural and cultural environment.

Foster eventually chose Visionary Development Company (VDC) to develop the property. He sold them an option to buy the land, allowing them to develop plans and obtain permits for the project without risking full investment in the property. VDC realized that, given the town's bare-bones bylaws, rezoning would be required to develop the site properly. Since rezoning would be a risky and difficult undertaking, they decided to first obtain preliminary approval of a conventional plan for the site.

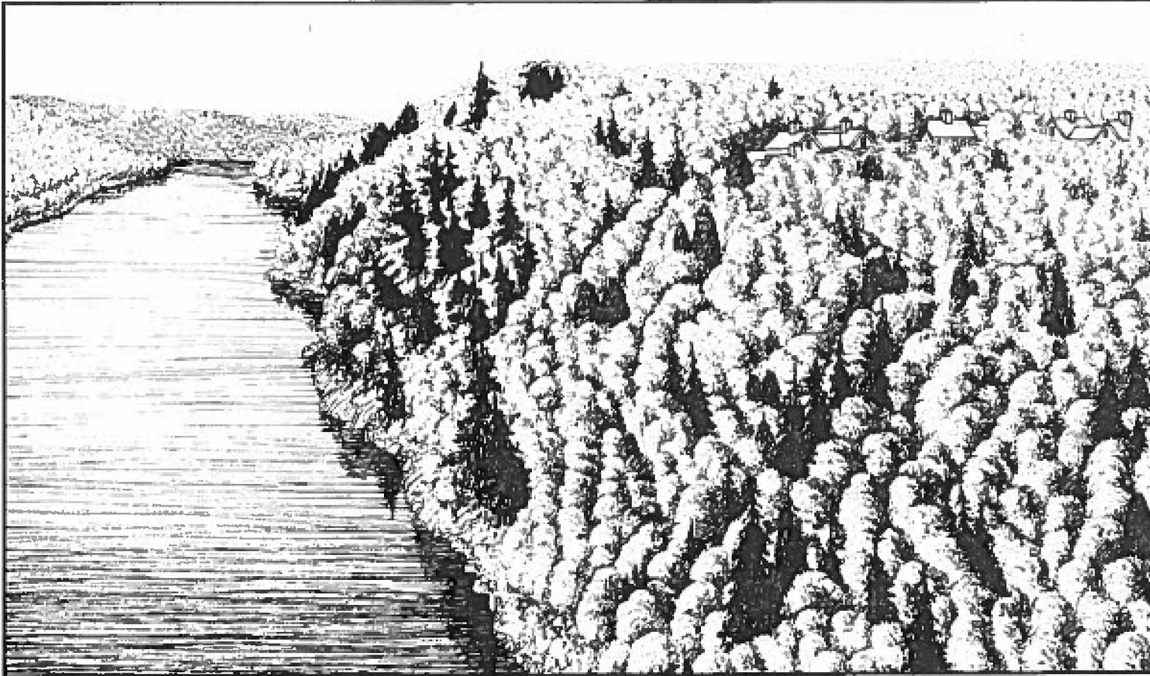


Ground Level View of Site H Before Development

After their conventional plan for the site was approved, VDC developed a creative plan for the property that maintained the same overall density of development, while greatly reducing the environmental, visual, traffic and noise impacts of the development on the site. They submitted this plan to the town, demonstrating the many ways it improved on the conventional development scenario currently mandated by the town's by-laws. The contrast between the two plans awakened town residents to the fact that their current zoning by-laws were actually contributing to the degradation of the town's environment and rural character by encouraging strip development along the major approach roads. After reviewing the zoning changes proposed by Foster Simmons and VDC, and making necessary modifications, the town planning board endorsed the rezoning, which passed by a large majority at town meeting that spring.



Ground Level View of Site H After Conventional Development



Ground Level View of Site H After Creative Development

Local residents noted with irony that it had taken a *developer*, of all people, to show them how to increase environmental protection and the preservation of rural character by amending their outdated by-laws.

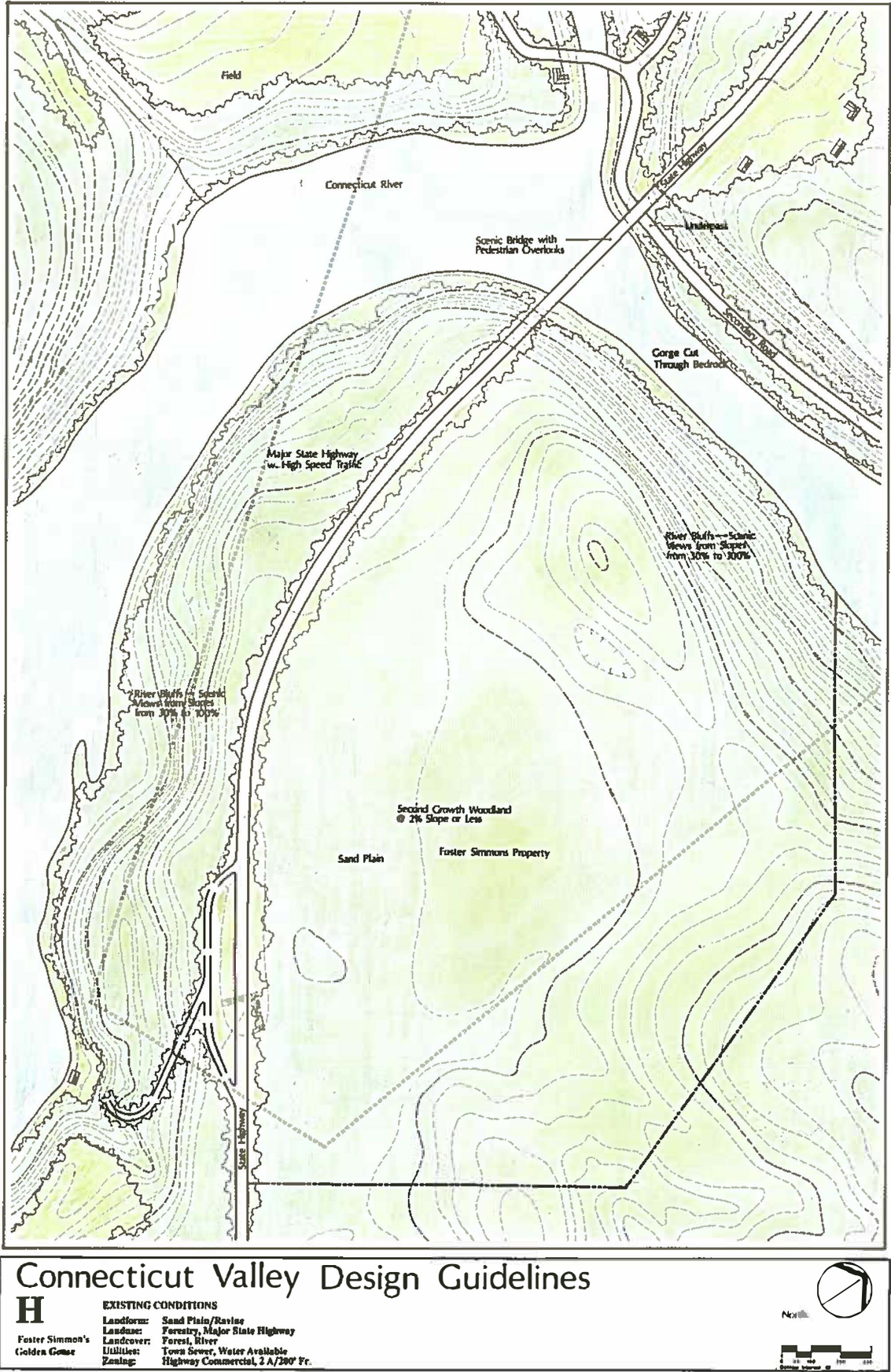
The zoning changes sought by VDC for the property included the ability to group the buildings on a portion of the site, while preserving open space in other parts of the property. This allowed maximum flexibility to locate new development away from sensitive areas of the site. They also sought the ability to submit the proposal as a Planned Unit Commercial Development (PUCD). The PUCD would also allow the project proponents to use their creative planning, design and engineering skills to meet the stringent performance criteria enumerated in the new bylaw governing preservation, the environment, health and safety, visual quality and rural character. A site plan review provision in the proposed bylaw encouraged the planning board and other town boards to become actively involved as constructive critics and sources of information and ideas in fundamental site planning decisions. Formerly involved only in debating minute details of road widths and culvert dimensions, the boards could now become actively engaged in negotiating fundamental changes in basic site planning issues, such as the location of buildings and roads on the site. The design guidelines in the site plan review by-law provided the town with a fair, efficient procedure to ensure that new commercial structures fit in with the architectural context of the community. When used together, the site plan criteria and design standards assure the town that site planning and architectural issues are both addressed in an integrated way.

VDC located the proposed development in three separate parts of the site: a multi-family residential area, a tourist-related commercial area with direct frontage on the state highway, and an office/motel area located back from the highway in the woods. By clustering the development in this manner, over half the land could be preserved as permanent open space. Four-fifths of the road frontage on the state highway was also left untouched, protecting the natural scenery and environment on which the tourist businesses depend for their survival.

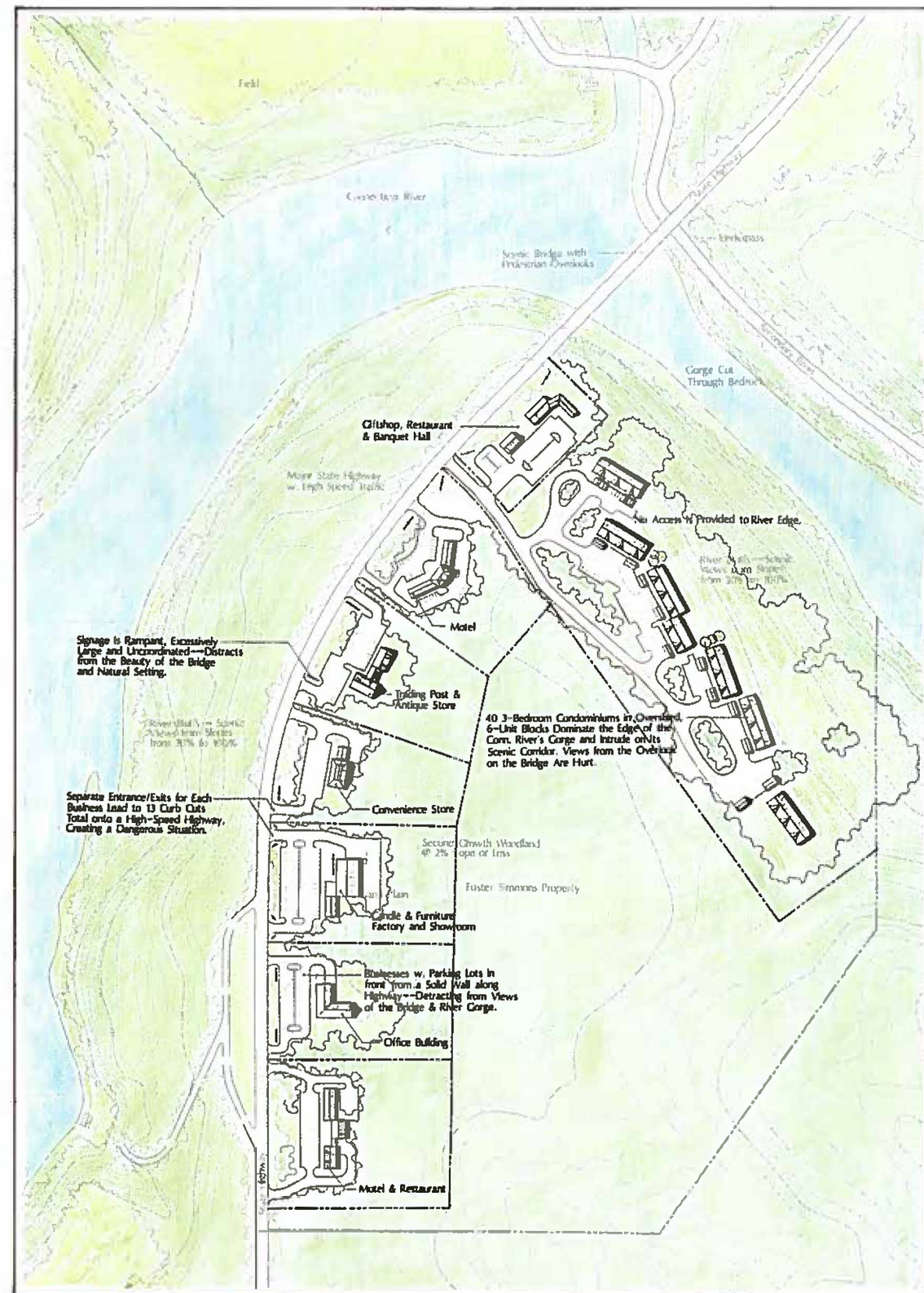
Because of the need for direct access and visibility to the traffic on the state highway, the tourist-related commercial cluster was located near the road adjacent to the bridge. In addition to the private businesses located here, the state highway and environmental agencies collaborated with the businesses to establish a visitor's center and nature study area within the complex for tourists stopping to walk out on the bridge. VDC donated the entire gorge section of the property to state and local conservation agencies, which developed a management plan and interpretive program for the area. The tourist-related business area was designed to buffer parking at the rear of the buildings, which were carefully designed to blend in with the traditional architecture of the town. The new buildings form an attractive edge along the state highway, reflecting the location of commercial structures adjacent to roads in other parts of town. Clear, well-designed signs direct traffic onto an entrance road leading to the screened parking areas. Screened, color-corrected lighting; attractive sidewalks, shade tree, shrub and groundcover plantings and grading create an appealing shopping and tourism environment.

The office/motel area is located back from the highway, screened from view by a woodland buffer. Clear signs indicate the range of facilities available in the cluster. The commercial buildings are arranged around a central green, enhancing the character and environment of the complex. Since the area is screened from view, less stringent architectural guidelines were used, allowing a wider range of structures here.

The residential complex is located below the ridgeline separating the river gorge from the uplands. A buffer of undisturbed forest vegetation assures that construction of the buildings will not cause runoff, erosion or wildlife habitat loss on the fragile banks of the river. Pitched roofs and the use of a variety of rooflines and attached structures give the multi-family units a rambling farmhouse character (generally following the traditional pattern of "big house, little house, backhouse, barn"). By locating the buildings away from the gorge and ridgeline, views of the river from the bridge remain unspoiled by the new residential construction. Paths to nearby viewpoints over the gorge allow residents to enjoy the views within short walking distance of their homes, and a trail system leads down to the protected banks of the river.



Plan of Site H Before Development



Connecticut Valley Design Guidelines

H 1

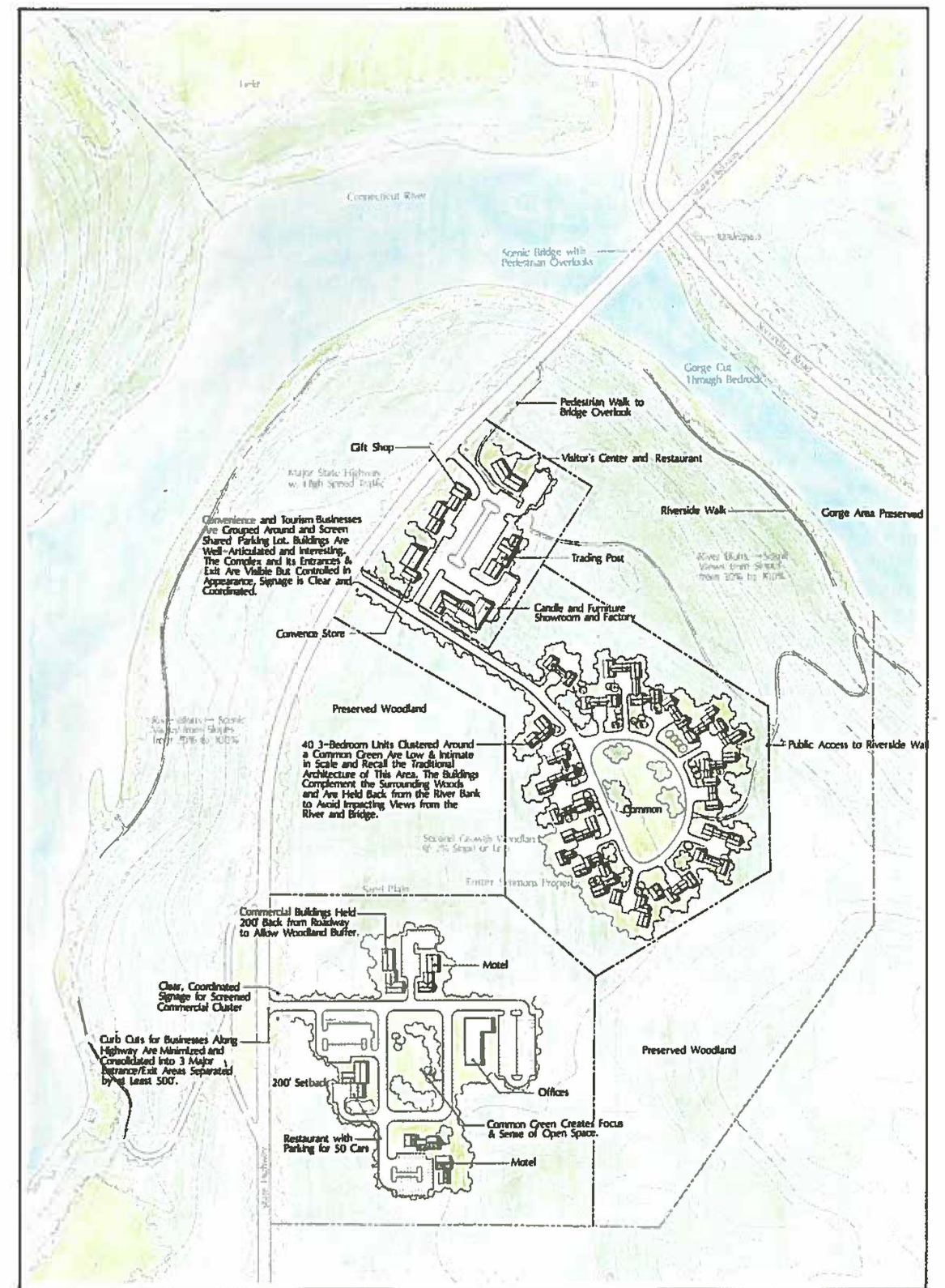
EXISTING CONDITIONS	NEW DEVELOPMENT (Conventional)
Landform: Sand Plains/Ravine	Type: Highway/Tourist Commercial
Landuse: Forestry, Major State Highway	Density: Multi-Family Residential Condos
Landcover: Forest, River	High: 2 Acres/Unit
Utilities: Town Sewer, Water Available	Commercial: Highway Strip
Zoning: Highway Commercial, 2 A/200' Fr.	Residential: Riverside Condos

Foster Simmons's Golden Goose

North

0 100 200 Feet

Plan of Site H After Conventional Development



Connecticut Valley Design Guidelines

H 2

EXISTING CONDITIONS	NEW DEVELOPMENT	IMPLEMENTATION STRATEGY
Landform: Sand Plains/Ravine	Type: Highway/Tourist Commercial	New Zoning: Commercial: Site Plan Review, Cluster, Sign Controls, Design Review,
Landuse: Forestry, Major State Highway	Density: Multi-Family Residential Condos	Residential: Riverbank Protection, Site Plan Review
Landcover: Forest, River	High: 1 Acre/Unit	Other Tools: State Conservation Agency
Utilities: Town Sewer, Water Available	Commercial: Highway Strip	
Zoning: Highway Commercial, 2 A/200' Fr.	Residential: Townhouses on Common	

Foster Simmons's Golden Goose

North

0 100 200 Feet

Plan of Site H After Creative Development

Town Character Planning in the Connecticut River Valley

Since early settlements during the mid- to late 1600's, the visual character of the Connecticut River Valley in Massachusetts has been shaped by its landscape, transportation routes, and the lifestyles of the people who settled it. The Valley today exhibits the influence of a unique array of social and institutional customs brought by the settlers, customs which shaped the towns as much as the surrounding rural landscape and natural resources. At least twelve generations of people have settled here since the colonial period, and, as successive waves of immigrants moved into the Valley, they molded the towns into the picturesque communities we see today. Recognition of the overall character of the Valley, comprised as it is of the distinctive flavor of each town, is an important first step in framing an appropriate development and conservation strategy to deal with the tremendous growth the Valley is currently experiencing.

Many of the Massachusetts towns of the Connecticut River Valley have a "picture postcard" quality that is identifiable as typical of New England. But that quality is also very particular to the Valley. The characteristics which most New England towns share are the grassy, tree-lined town common, flanked by a white, steepled church, and the town hall. Most of the towns are filled with historic architecture: beautifully designed civic buildings, libraries, and homes arranged along stately, tree-shaded streets. It is the way these towns are configured, the types of buildings and their relationships to each other and to the natural landscape, that mark them as towns from the Connecticut River Valley, as well as towns with an individuality all their own.

Town character encompasses more than natural landforms and traditional buildings; it includes the town's social life as well. Whether people walk "downtown," congregate at the post office or the corner store, sit on benches along the streets, or meet at the Town Hall, all these social activities contribute to the composite character of any town. The town's buildings and their placement affect its social life, and therefore directly, and indirectly, affect town character.

Within the last two decades, suburban sprawl (created by scattered residential subdivisions and roadside commercial developments) has become common, and its continuation over the past 25 years has introduced a new element into the New England landscape. Both the subdivision and the commercial "strip" have become so pervasive that many Valley residents have begun to believe these conventional approaches represent the only way towns can grow. However, this pattern of land development, when set into traditional communities such as those which abound in the Connecticut River Valley, produces a devastating effect upon town character and quality of life. It weakens our sense of place by introducing larger lots, longer setbacks, architecture which does not integrate well with traditionally styled buildings, and superabundance of asphalt and signs. The new developments are fragmenting and paving over farmland at an alarming rate.

Practical solutions do exist to these problems, and in using them, new developments can be successfully integrated into the existing townscape without compromising the character of the town. Many of these solutions are presented in the following pages as tools any town can adapt to its own particular circumstances to protect or enhance its own town character.

The case studies prepared for the towns of Hadley and Gill provide background information for understanding and adopting the model bylaws. Each model bylaw must be interpreted in terms of a particular town's needs and character in order for them to function to their full potential.

The first step in defining a town character plan is to gather information about the town. This should include:

- a history of the town and its overall land development pattern;
- an inventory of the town's natural resources including soil types and capabilities (available from the Soil Conservation Service), a map of existing land use, a map of existing zoning, a map of

existing vegetation/forest cover, a list of environmentally and archaeologically sensitive areas (obtainable from the Department of Environmental Management and the Massachusetts Historical Commission), and a map of the town's surface water bodies and aquifer recharge areas;

- a consensus on the part of town residents as to what constitutes their town's character;
- a map of the scenic resources in the town, the loss of which would destroy part of the town's image.

The second step when formulating a character plan is to evaluate present conditions in the town. Existing zoning bylaws and subdivision control regulations should be examined, as well as their enforcement. The best regulations in the country will not accomplish the goal of preserving town character unless they are properly and impartially enforced. In examining existing bylaws, their original intent should be understood: have they outlived their usefulness, or have they become inadequate for the present scale and intensity of development? Many towns could benefit from certain basic changes in their zoning bylaws, which, more likely than not, are inadvertently encouraging the erosion of town character rather than protecting it as the bylaw was intended.

The third step in devising a town character plan is to work with all municipal boards and residents to develop a practical and effective strategy to implement shared goals for the future conservation of the town's special features. This is the most difficult step, since changes in regulations require that a public consensus be reached and this process often involves a great deal of discussion, debate, and public education. The rewards, however, are great in the preservation of a quality of life and visual character that makes the town unique.

Two Town Character Plans

The town character plans formulated for Hadley and Gill are presented in the following pages as models reflecting the individual characteristics of two Connecticut River Valley municipalities. Both towns possess a considerable length of frontage along the Connecticut River, and both still enjoy a strong farming tradition. However, much of the similarity between them ends there. Their historical and cultural backgrounds, together with their natural and cultural landscapes, have evolved to produce two quite different towns with a distinctive character and quality of life all their own.

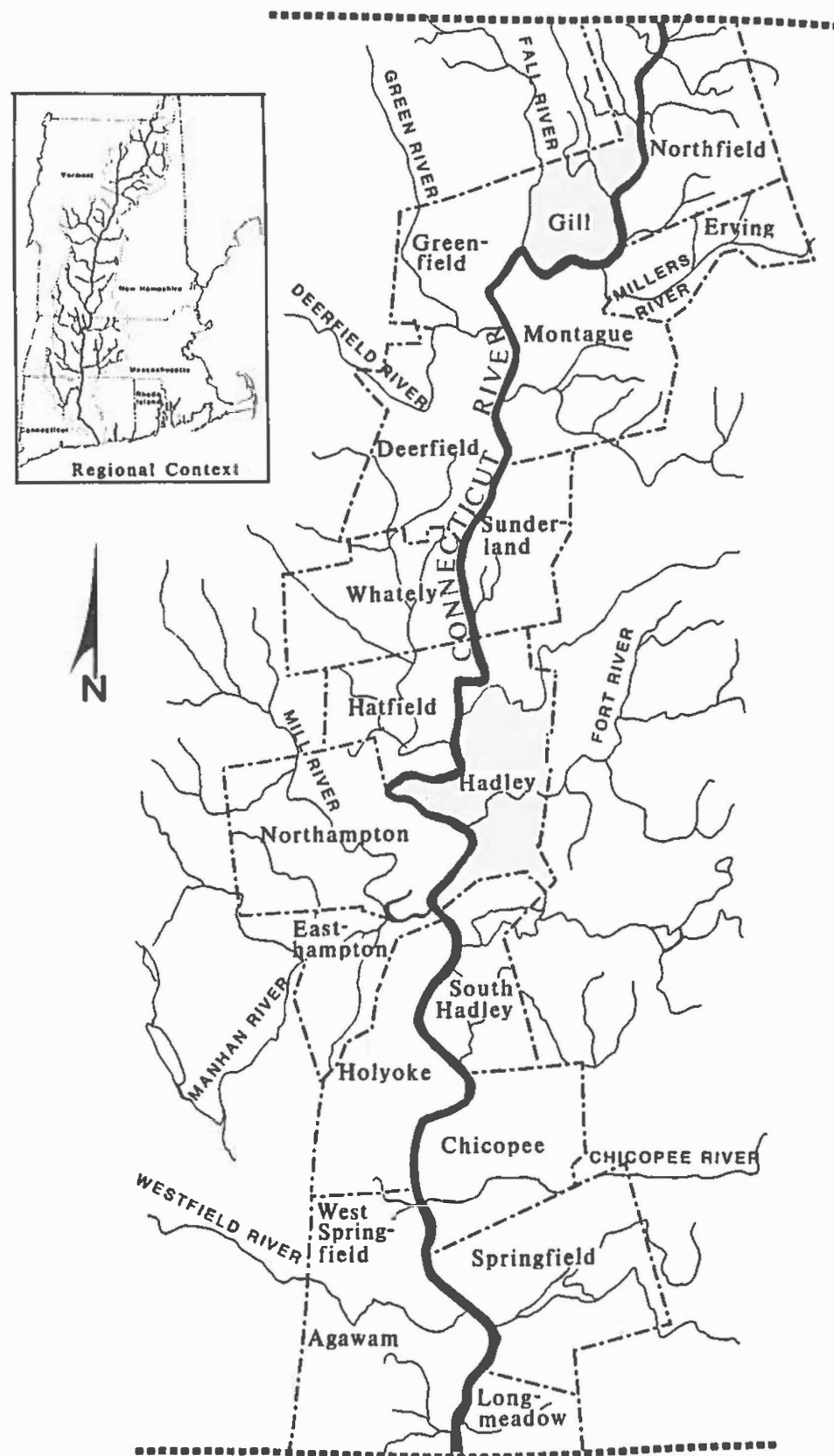
1. Description of Town Character and Landscape Types

1.1 The Town of Hadley

Historical and Cultural Background

The Town of Hadley, Massachusetts (pop. 4,400) is situated on a deep and fertile alluvial floodplain which has historically provided local residents with some of the most productive farmland in the Commonwealth. Long before the European settlers arrived, this area had been populated by the Nonotuck Indians, who sustained themselves in their diverse landscape through fishing, farming, and hunting. Until the outbreak of King Philip's War in 1675, Hadley's native population remained strong and lived in ecological harmony with its natural surroundings.

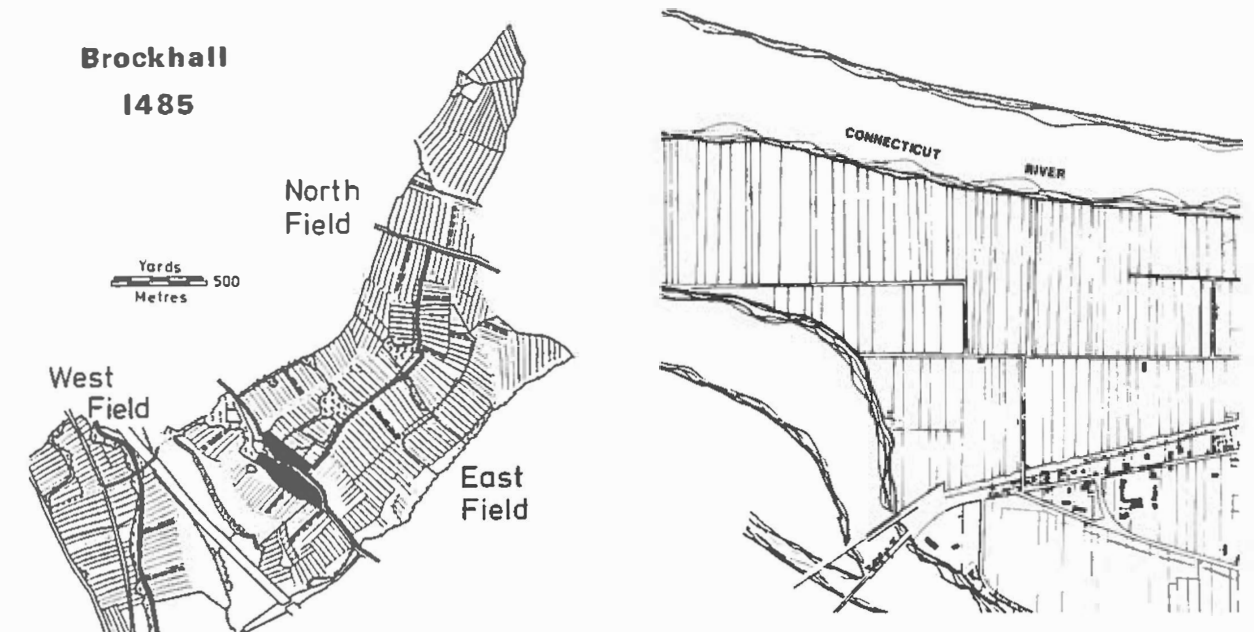
The town's first English colonists arrived in 1659 when the Hadley Plantation was established in the Norwottuck Meadows, now West Street. These colonists were Congregational dissenters from Hartford and Wethersfield, Connecticut, under the leadership of the Reverend John Russell. The plan of the town was decided before settlement began, with 8-acre house-lots arranged along two streets paralleling a broad common measuring one mile in length (Farmer, 1985). This mile-long common, laid out on a north-south axis, is still intact and underpins much of Hadley Center's unique character.



Map 1: Location Map of the Connecticut River Valley Showing the Towns of Hadley and Gill.

The long, narrow strips of crop land established in the "Honey Pot" area between West Street and the the Connecticut River constitutes an extremely rare land pattern, which is unique in New England, as the nation's sole surviving example of medieval English field ownership boundaries.

As the accompanying figures show, the 17th century field ownership pattern in Hadley (which survives to the present day in the "Honey Pot" area) is very similar to the traditional English pattern which existed from pre-Christian days up to the Enclosures of the 1800's. With strips typically 22 yards wide and 220 yards long (a furlong or "furrow long"), this system allowed for more efficient plowing. English farmers were assigned several strips in different parts of the open field, on the principle that no individual should have all of the best (or worst) land.



Maps comparing 15th century English field pattern with 17th century field patterns in Hadley, Massachusetts. Source: *Medieval Fields*, by David Hall (Shire Publications, Ltd., 1982).

The homes around the West Street common remained the focus of the colonial settlement throughout the 1600's and the early 1700's. By 1675, the village was protected by a stockade to repel native attack during King Philip's War, although the exact location of this defensive is unknown today. About that time an incident gave rise to the "Angel of Hadley" legend in which an aging British regicide (i.e., one of Charles I's executioners) emerged briefly from hiding to lead the colonists in driving away the Indian attack.

In 1713 Middle Street was laid out to the east to accommodate further expansion, and grew to become the new municipal center. The pattern of a long, north-south axis was repeated here and also on East Street, with five to ten acre parcels stretching out in deep narrow lots behind each house. This unusual development of the town center provided Hadley with a unique landscape of broad, tree-lined streets alternating with long tracts of farmland.

The village of North Hadley developed principally during the period between 1775 and 1830 as an agricultural and manufacturing village. Today it is a village with a very strong visual link to the past, clustered linearly along Route 47 and characterized by an attractive grouping of historic homes, town buildings and commercial establishments. The construction of a separate Town Hall in the village during the last century has given North Hadley a greater sense of community and individuality than it might otherwise have acquired.

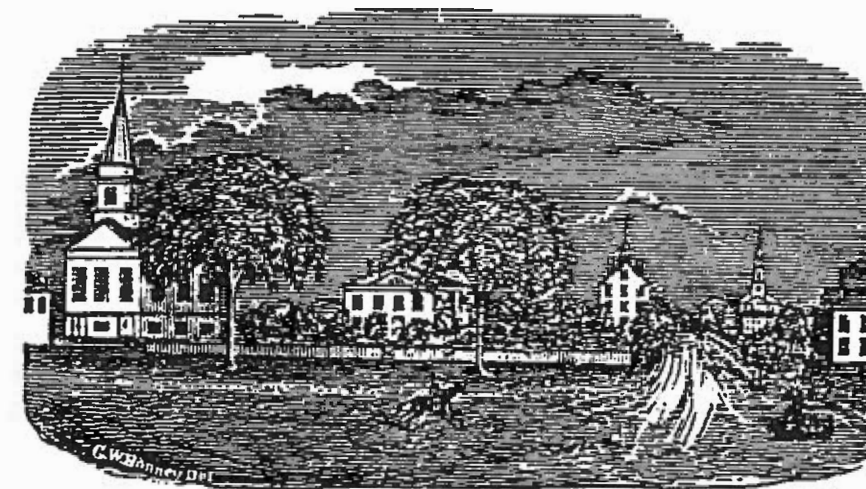


Mid-1800's etching of the "Angel of Hadley," courtesy of Hadley Historical Society.

Hadley also possesses a strong immigrant history reflecting a variety of ethnic backgrounds. During the early industrial period (1830-1870) seven out of ten immigrants were Irish, with smaller numbers from Canada. The French Canadians, reputedly excellent broom tiers, contributed to the development of a thriving industry. During the closing decades of the century there was an influx of Central European immigrants (mainly from Poland) who brought with them an exceptionally strong land ethic and pride in agriculture which survives to this day.

During the mid 19th century, the introduction of commercial tobacco production had a great and lasting effect on the landscape of Hadley through the construction of wooden tobacco barns, often built in long, parallel, south-facing rows. Although now largely unused due to declining tobacco production, their long, low construction and their arrangement in repetitive patterns have made them distinctive features of the town's landscape.

The greatest factor contributing to Hadley's character is its primarily agrarian land-use, with large open meadows, extensive fields of crops, and smaller plots of vegetables covering two-thirds of the town's total area. This landscape surrounds the densely developed historic town center and villages. Today, however, views across much of this landscape are being interrupted or blocked by new commercial roadside development and conventional "frontage-lot" residential subdivisions. A mix of residential and commercial development lines most of the major transportation routes through town: the east-west Route 9 corridor connecting Amherst with Northampton; the north-south Route 47 corridor linking towns on the eastern bank of the Connecticut River. Route 116 North, a limited access highway linking the surrounding communities to the University of Massachusetts, and the University to Route 9, is zoned for general commercial development. Route 47 and Route 9 intersect at Hadley Center, creating heavy traffic and attracting commercial development that threatens the historic landscape, especially along Route 9.



An 1847 etching of Hadley's new town center located on Middle Street.

During the last few years, residential development has occurred mainly on "frontage lots" along existing roadways. Recently, several large subdivision proposals involving more than 250 new houselots have been filed, an incidence which has underscored the immediate need for effective growth management strategies to preserve the town's character. The growth of both frontage lots and conventional subdivisions obstructs the long views across the open fields, which are one of Hadley's greatest visual assets.



A panoramic view east of North Hadley around the turn of the century.

The Natural Landscape

Hadley's land area of approximately 23 square miles can be characterized by the juxtaposition of gently rolling floodplain and sharply rising hills. The effect is of a town filled with scenic panoramas - long views over undulating farmland, to wooded hills in the distance. The majority of the landscape in Hadley owes its composition to the ancient deposits of glacial Lake Hitchcock, and later to the overlying deposits of the flooding Connecticut River. This rich alluvial floodplain formed the basis for much of Hadley's cultural landscape of fields and farmsteads which provide many opportunities for scenic vistas. There are, in fact, few places in town where the landscape views are not strikingly beautiful.

The Massachusetts Landscape Inventory, prepared in 1983 by the Department of Environmental Management, noted the fineness of Hadley's landscapes, classifying 75% of Hadley as having "noteworthy" or "distinctive" scenic character. For the purpose of developing appropriate land-use planning strategies, the town can be divided into five areas of significant natural landscapes. Each of



Panoramic view of Hadley, from Mount Holyoke.



An example of tobacco barns in Hadley's farm landscape.



A view from Mount Holyoke through Hadley to the University of Massachusetts.

these areas provides different opportunities and constraints for development when viewed in conjunction with the existing cultural landscape. These areas are:

1. The Holyoke Range and Mount Warner, which provide both a backdrop for views and also a look-out to other areas of Town. The natural, undeveloped appearance of the north-facing slopes of the Holyoke Range is extremely important, as these areas are visible from many parts of the Town.
2. The "Honey Pot," an area of exceedingly fertile farmland on the floodplain peninsula west of Hadley Center.
3. The confluences of the Fort and Connecticut Rivers and the Mill and Connecticut Rivers, which are areas of unique vegetation and wildlife.
4. The broad river terraces to the north and south, on which are located most of today's active farms.
5. The Connecticut River itself. Hadley has 15 miles of frontage on the Connecticut River, more than any other Massachusetts town.

The Residents' Perspective

General sentiment in the Town of Hadley appears to be that "the town is losing its character." When residents are asked "What defines the character of the Town?", an almost universal answer is "the rural, farming landscape." The problem, as perceived by most town residents, is the encroachment of development on previously open views and farmland. Although they realize development cannot be halted, the question remains "How can we blend in new development and maintain the visual character and quality of life that we know and love?"

Answers to the question "What are the specific elements that make up the character of the Town?" are often varied and detailed. The most important realization is that the entire landscape, comprised of

buildings, natural features, trees and people, all contribute in some way to the character of the town. The individual elements most commonly cited by town residents are:

1. farmland;
2. views of the Holyoke range, especially of Mount Holyoke;
3. open views across fields;
4. the Summit House atop Mount Holyoke;
5. West Street Common;
6. the historic homes along West Street;
7. Hadley Center, consisting of the broad, tree-lined West, Middle, and East Streets;
8. the municipal buildings both at Middle Street and Route 9, and North Hadley Town Hall;
9. the area of farmland known as the "Honey Pot";
10. the village atmosphere of North Hadley;
11. the scenic views from Route 47 North; and
12. the Connecticut River.

These are the town's most commonly remarked physical features, although many residents have their own personal favorite areas, views and sites.

1.2 The Town of Gill

Historic and Cultural Background

The Town of Gill, with one of the smallest populations in Franklin County, is located in the Connecticut River Valley of Massachusetts only a short distance from Vermont. In contrast to the broad, bowl-like landscape of Hadley, Gill is characterized by rolling, largely forested hills, providing a wide variety of diverse landscape views. The town's rural character is also defined by its extensive network of gravel roads, which are sparsely inhabited. The town is bounded on three sides by rivers: to the south and east by the Connecticut River, and to the west by the Falls River. To the south, on the Connecticut River, lies Turner's Falls, a natural falls dammed for hydro-electric production. Gill is bisected in its southern extremity by the Mohawk Trail (Route 2), a scenic road which is receiving heavier use by commuter traffic to suburban Boston employment centers. The town of Gill contains two villages, Riverside and Gill Center. Gill Center is the civic center of the town, while Riverside has developed as a residential area.

The area today encompassed by Riverside, extending along Barton's Cove to the Narrows, was used extensively by native American Indians for fishing, while the floodplain areas were put to agricultural use. According to archaeological studies, Gill appears to have been one of the most heavily populated Native American areas in the Connecticut River Valley, home to the Pocumtucks until the Mohawk attacks of c. 1664 (MHC, 1982). Old native trails have evolved into today's regional transportation routes, following West Gill Road and Main Road to Gill Center and Grassy Hill.

Gill's first colonial settlement did not occur until about 1776. The 1794 meeting house on the green, in the town's geographic center, established a civic focus which continues to the present day. The economy of this period was based entirely on agriculture, with a few saw and grist mills established beside Fall River and Dry Brook. Noted for rich grazing and tillable soils, Gill developed a reputation for corn and rye crops which were sold to Boston and river towns to the south. During the 1800's the town's population fluctuated from a high of 864 in 1830 to the low of 635 in 1875, and then rapidly rose to 1,082 residents with the development of Riverside in conjunction with the industrial town of Turner's Falls across the river.

The establishment of the Turner's Falls Company and the subsequent development of the accompanying industrial town during the 1860's and 1870's, together with the completion of a



Gill Center at the beginning of the 20th century.

suspension bridge connecting Turner's Falls and Riverside in 1878, resulted in the development of Riverside as a place of suburban residences for the businessmen of Turner's Falls. Turner's Falls also became an important market for fresh farm products from Gill (MHC, 1982). The founding of the Mount Hermon School in 1881 also increased the market for farm produce and, as the Greenfield Gazette noted in 1892, "The whole place bids fair to become quite popular as a resort of city people" (MHC, 1982).



The village of Riverside (Gill), circa 1900 (Gill Historical Society).

One of the most spectacular engineering works in the Connecticut River Valley is Gill's French King Bridge, completed as part of improvements to Route 2 in 1932. It was awarded the American Institute of Steel Construction's Annual Award in Merit for the most beautiful steel bridge of its time. The bridge is a focal point of pride for town residents, as well as being a tourist attraction along scenic Route 2.

The orientation of Gill as a "bedroom community" has continued to the present day. Stoughton (1978) in his history of Gill writes that "Gill has ranked as one of the small towns in the state, but since the introduction of the automobile, enabling the employees in nearby factories or other places of business to live amid rural surroundings, the landscape of the town is fast becoming dotted with attractive dwellings of such residents interspersed among the farms." This trend has significantly increased to the present, to the point where the townspeople feel threatened by overdevelopment.

The Natural Landscape

The Town of Gill covers a total of 9,421 acres or 14.72 square miles. The landscape is comprised principally of hills and rolling farmland, with several extensive areas of gently undulating flood plain along the Connecticut River. Close to fifty percent of the land area is wooded, the majority occurring in the more hilly areas. The town has many scenic vistas, some encompassing miles of viewscape over surrounding towns.

The Town is bordered in two places by especially scenic areas, Turner's Falls and the French King Gorge. Before the dam at Turner's Falls was built, there was "a sheer drop between the island and jagged rock along the Gill shore through which the water plunged for a distance of some 400 feet" (Stoughton, 1978). The Indians had named this waterfall Peskeompscut or "water cleft by a rock." Although it has lost much of its original natural beauty, the falls and rapids remain one of the most remarkable features of the Connecticut River.

French King Gorge and Rock are located a short distance upstream. In early times the rock "rose some 16 feet above the normal water level," and tradition holds that, during the French and Indian



French King Gorge, from the Route 2 bridge.

Wars, a French officer was so impressed with the rock that he took possession of it in the name of the King of France (Stoughton, 1978). The French King Highway and French King Bridge were subsequently named after this rock.

The town itself may be divided into four landscape areas:

- 1. the floodplain areas around Riverside and Barton's Cove;
- 2. the rolling uplands covering much of Gill;
- 3. the relatively flat plateau of western Gill; and
- 4. the eastern floodplains of the Connecticut River, in the area of Munn's Ferry.

The views of undeveloped hillsides, ridges, and summits are extremely important to the scenic character of Gill. These views could be lost if unchecked development were to occur in these areas.

The Residents' Perspective

As in Hadley, the residents of Gill are beginning to become quite concerned about the loss of their town's character. They see this change embodied in the proliferation of single-family homes, the majority of which are being built as "frontage-lot" developments. There is great concern about the effects of unchecked growth on groundwater resources, both in terms of pollution and availability. Many of Gill's soils will not support septic systems, and therefore the town has adopted two-acre lot zoning in an effort to protect ground water from septic system pollution.

The most commonly cited areas of concern in Gill are:

- the preservation of farmland;
- the preservation of the village character of Riverside;
- the proliferation of tourist based businesses along Route 2;
- the replacement of forests with subdivisions;
- the effect of unbridled growth on town services;
- groundwater availability and purity; and
- the acquisition of open space, especially river frontage.



A tree-lined street in Gill today.

2. Planning Strategies for the Integration of New Development in Hadley

2.1 The Town of Hadley

To conserve Hadley's unique character and the town's position as the Commonwealth's most prominent farming community, residents must seriously consider and implement new and different planning strategies. Until the last few years, development has largely been occurring around Hadley, but recently has been expanding into the town. With its more affordable land and housing (relative to its neighbors, Northampton and Amherst) Hadley is becoming increasingly attractive to developers and homeowners alike.

The town must work on two levels simultaneously to achieve strong land-use regulations: internally regarding administrative matters, and externally with respect to the regulations themselves and their enforcement. Since the success of planning and land use regulation rests largely on the former, consideration of the administrative aspects is essential.

A. Administrative Strategies

The sudden large increase of development during the past few years has left the Planning Board overburdened with administration and permit-granting, nearly to the exclusion of long-range planning. In order to ease the burden on Planning Board members (who are paid only a nominal fee for their service to the town) a full-time Town Planner is urgently needed. The planner would provide services worth far in excess of the salary amount, in advising the Planning Board on land-use and permitting decisions, thereby freeing their time from administrative work. The planner could also apply for and administer planning grants, and perform much of the technical work necessary for the long-range planning the town desperately needs.

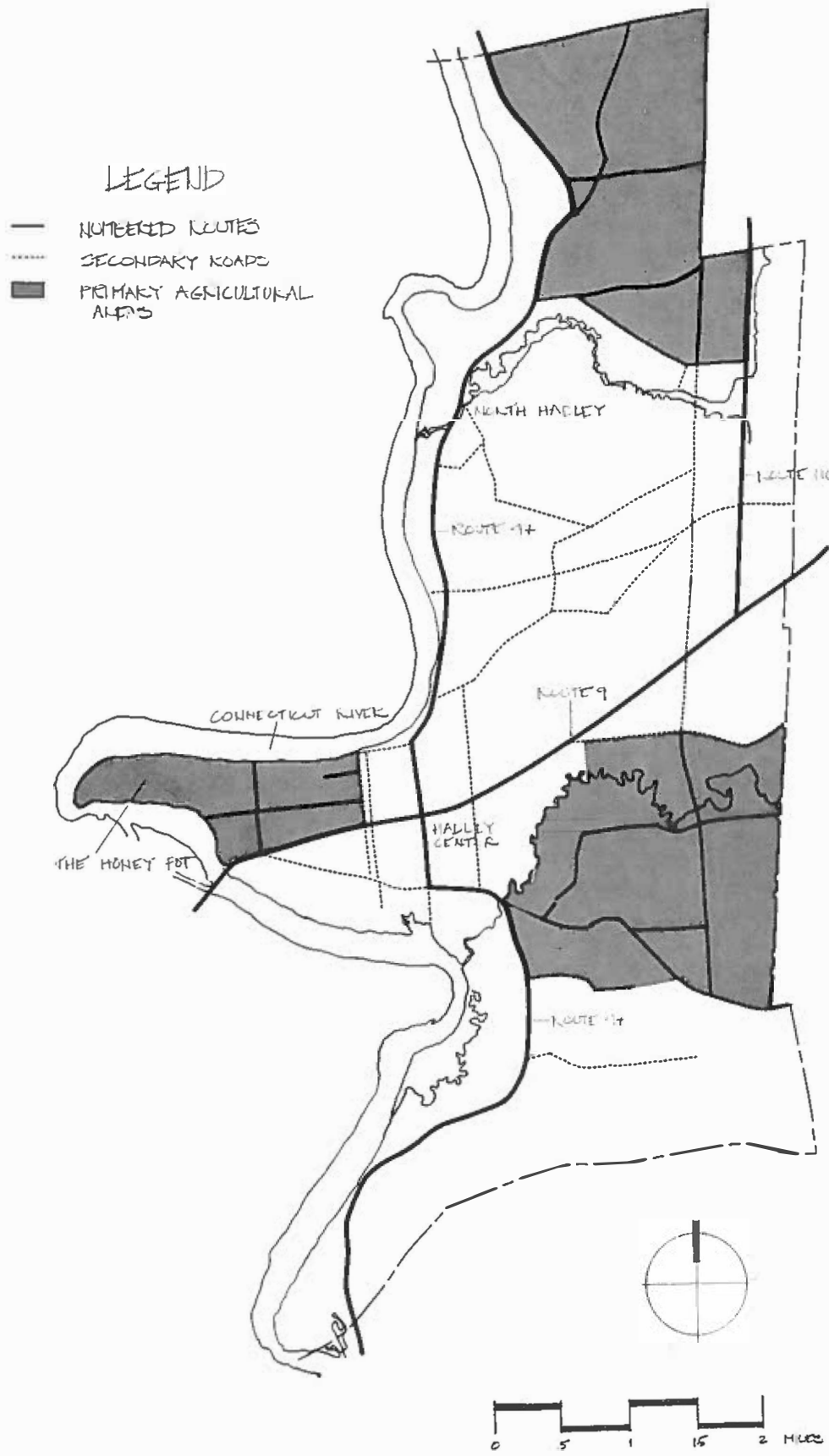
A second administrative strategy, which the Town could adopt to allow the Planning Board more time to devote to long-range planning issues, would be to establish a separate Site Plan Review Board. This advisory board could either be appointed by the Board of Selectmen, or be composed of one member of the Conservation Commission, one member of the Planning Board, one member of the Historical Commission, the Building Inspector, one member of the Board of Health, a representative from the Fire Department, and a citizen-at-large (preferably an architect or landscape architect). The board's specific duty would be to review site plans and make recommendations to the Planning Board for approval or disapproval of Special Permits requiring Site Plan Approval, or directly render decisions for developments not also requiring a Special Permit from the Planning Board.

B. Land Planning Strategies

To conserve the quality of its traditional character, Hadley must pay special attention to the following issues: the conservation and development of agricultural open space, the conservation of the town's historical architecture and landscape, and the development of carefully designed commercial areas. Although these issues are interrelated, there are specific strategies the town may employ to retain Hadley's distinctive character.

(1) The Conservation of Agricultural Open Space

As noted previously, Hadley possesses the distinction of having more commercial farmland than any other town in the Commonwealth. Prime agricultural lands are clustered in three areas of town, although pockets of farmland are located throughout. The state's Agricultural Preservation Restriction



Map 2: Town of Hadley Showing Primary Agricultural Areas.



View across Hadley farmland to the Holyoke Range in the distance.

program is quite active, having bought the development rights to 15 farm parcels covering 475 acres, or about 6% of the town's currently farmed acreage. However, because the program is often underfunded, and because this approach cannot be expected to provide more than part of the overall solution, the Town must assume at least some of the responsibility for agricultural land preservation.

One effective strategy for the preservation of significant portions of agricultural land slated for development is the enactment of a "Farmland/Open Space Bylaw," in conjunction with the designation of Agricultural Districts (corresponding to the areas shown on the accompanying map). This bylaw would increase the minimum land area required per dwelling unit within the districts to 50,000 square feet (1.25 acres), from the present 30,000 square foot (0.75 acre) minimum lot size, on the grounds that agricultural land is a precious, non-renewable resource of great importance to the town's farming economy. The bylaw also provides for the grouping of homes (in proposed developments of three or more units) on no more than half the total acreage. The remaining acreage would either be owned in common by the residents of the development or retained by the farmer with a deed restriction prohibiting development. Thus, on a 12.5 acre parcel which could support ten homes, these ten homes would be built on ten 25,000 sq. ft. lots, and the remaining 6.25 acres would be permanently protected by a deed restriction prohibiting development. This acreage can then be farmed or retained as open space.

There are advantages for almost everyone with this type of zoning. Farmers receive full equity value for their land when they wish to sell, while still preserving a significant portion of the farmland. Although only potentially half of the parcel would be left available for development, the total number of units allowed would remain the same as if grouping of the homes were not required. These developments are attractive to both home buyers and developers since home buyers are assured of being in proximity to protected open space, and developers incur reduced infrastructure costs. These reduced costs for roads translate into reduced future costs for the Town in road maintenance and repair, and increased retention of open space and agricultural land.

(2) The Preservation of Historic Areas

Hadley's West Street Common and the landscape surrounding it hold both statewide historic significance and a special place in the hearts of Hadley residents. The landscape is composed of three



Map 3: Historic Town Center of Hadley.



View north along West Street Common, Hadley.

broad, parallel avenues running north and south (West, Middle and East Streets), lined with mature deciduous trees and large, single-family residences. Between these streets run long, narrow lots ranging in size from four to ten acres, which are either actively farmed or are lying unused as open space.

This unusual town center configuration has provided Hadley with a unique, rural village landscape. Under the present zoning bylaws, there is insufficient frontage for most of the existing narrow lots to be built upon further. However, if these lots were aggregated into wider parcels under new ownership, they could easily be subdivided into additional houselots and much of the very special character that distinguishes Hadley from all other New England towns would be irretrievably lost.

The entire town center of Hadley has been nominated to the National Register of Historic Places. National Register certification is a largely symbolic honor, giving limited protection only from state or federally funded projects. For more effective local control, the West Street common and the historic homes lining it have been proposed by the Hadley Historical Society as a local historic district under the enabling legislation of M.G.L. Chapter 40C. The local Historic District Bylaw would allow the town to regulate exterior changes in the West Street area much more effectively. The bylaw would regulate the outer appearance of additions and alterations to existing buildings, as well as the design of new construction. This bylaw would be of extreme value to this area, for through it the town would have some control over future residential homes and commercial developments along that small portion of Route 9, both of which can and will erode the character of this area.

North Hadley, the other major village within the Town, possesses an outstanding historical landscape having retained its rural atmosphere, along with the majority of its historic homes, town buildings and commercial establishments. North Hadley is beginning to experience development pressure from both commercial and residential uses, mainly along the Route 47 corridor. The North Hadley Town Hall, the centerpoint of the village, is also in jeopardy. At present it needs major renovations, both in terms of maintenance and weatherization, since heating bills are a burden to the community.

Because various sources of funding exist for public buildings which have been listed on the National Register, completing the paperwork to nominate this building should become a Town priority. Once

accepted to the National Register, the town can access funds under the Massachusetts Historical Commission Preservation Projects Fund or the National Trust.

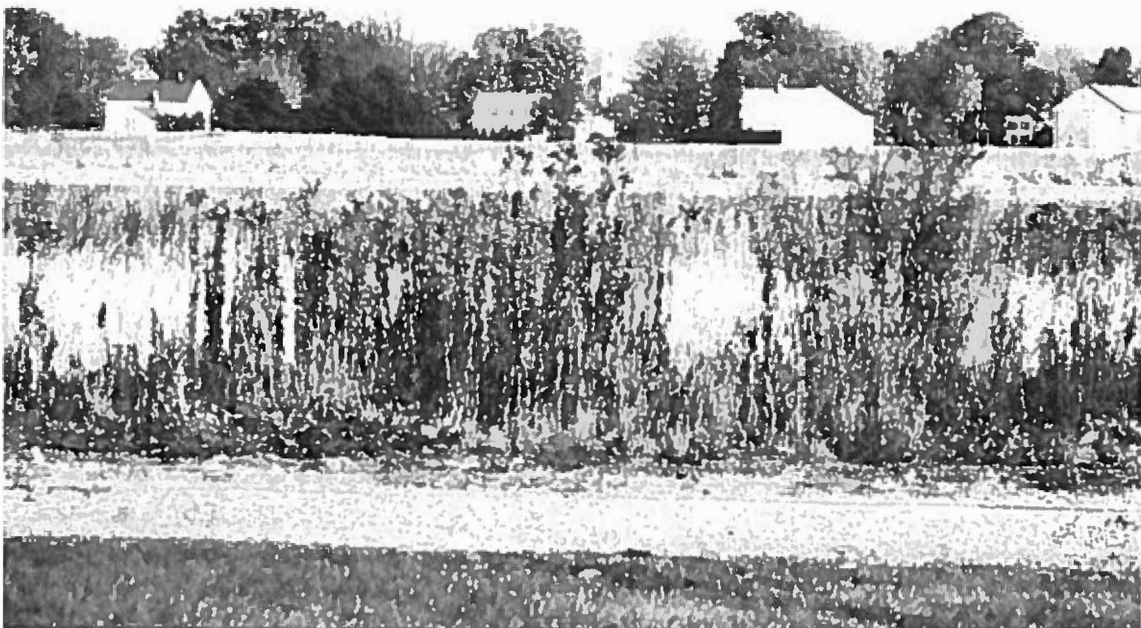
A limited application of the local historic district bylaw proposed for West Street would be extremely useful in preserving this village's character. The bylaw, set up to review new construction, renovations or additions to existing buildings, offers more effective oversight of architectural style and materials than does Site Plan Review.

As farmland is the single most significant feature of the landscape surrounding North Hadley, insensitive development would seriously detract from the character of the village itself. Therefore, the Farmland/Open Space Conservation and Development Bylaw as referred to in the previous section (and presented in model form in Section Four) provides a useful method for retaining some of the characteristic open space surrounding North Hadley.

(3) Commercial Districts

At a special Town Meeting in 1986, the town adopted an expanded Site Plan Review Bylaw requiring site plan approval for all construction, exterior alteration, relocation, or change in use of any commercial or industrial building over 3,000 sq. ft. total floor area. This was an important step in the regulation of commercial and industrial uses within the town. However, three further steps should be taken by the town to strengthen this bylaw: first, the minimum floor area should be reduced from a minimum of 3,000 sq. ft. to include developments over 200 sq. ft. total floor area; design guidelines for the approval of a site plan should be adopted (model guidelines can be found in Section Four); and, the scope of the bylaw should be widened to include all non-residential uses (such as municipal, institutional, fraternal, educational, etc.). The reason for reducing the 3,000 sq. ft. minimum floorspace threshold for reviewing new development is that a wide variety of small businesses require less than 3,000 sq. ft. of floor area. For example, gas stations, car washes, used car lots, small motor repair shops, convenience stores, etc. all could be established with much less than 3,000 sq. ft. of floorspace, and these types of businesses could easily produce a significant impact on the town if no minimum design standards are required.

The necessity for design guidelines and performance standards is administrative as much as regulatory.



View across the open farmland between East and Middle Streets, Hadley, MA.

When a clear set of design guidelines accompanies the Site Plan Review process, the intent of the bylaw is made clear to both the review board and the applicant. It also helps to encourage more equitable and consistent decisions by the board. In the long run, design guidelines will improve both the quality of the submissions and the quality of the developments.

Commercial "strip" development is becoming recognized as a serious problem by an increasing number of Hadley residents. The 1987 annual Town Meeting took steps to remedy this situation by rezoning the northern portion of Route 47 as a limited business district. This rezoning restricts both the size and the type of commercial development allowed by right and that allowed only by Special Permit. The Special Permit process has attached to it specific design guidelines for site plan approval in this district.

Further refinements to this rezoning effort must include a revised signage bylaw, not only for the limited business district, but for the entire town. Signage is the single most important element preserving character in commercial areas, and, if the town adopts regulations for its historic sections as well as for its scenic roadside (Route 47) and its commercial roadside (Route 9), much more of Hadley's special character could be preserved. A model bylaw and sign design guidelines may be found in Section Four.

Although the northern section of Route 47 has been rezoned, the southern section still remains zoned business. Since the scenic character of both the northern and southern segments of Route 47 are of the same high quality, it is reasonable that the southern portion should be rezoned as limited business as well. This would help protect the largely residential and agricultural character of the area, and would minimize conflicts between commercial and residential uses such as those presently occurring along Route 9.

Many residents of Hadley feel that Route 9 is "beyond redemption." In fact, the original intention of this long, linear commercial district was that it would serve as a "receiving zone" for all of the major retail and office development in Town, with the hopeful result of preserving the rest of the Town's character. This strategy has had questionable preservation success and has created a crowded and highly congested commercial strip. There are a number of strategies the Town could employ to mitigate the least fortunate aspects of this area. As mentioned previously, a revised and strengthened sign bylaw would help reduce the visual clutter of signs vying for attention. And again, adoption of design guidelines and performance standards for Site Plan approval by the Planning Board could also improve future developments, since these guidelines and standards would include strict limits on lighting, requirements for landscaping and buffering between commercial and residential uses, and a requirement for parking lots to be placed either to the side or rear of a development, thus breaking the



Roadside commercial development in Hadley.

trend towards "asphalt as far as the eye can see." In conjunction with this approach, instituting the innovative concept of a "maximum setback" for new roadside development would definitely help new buildings reinforce the traditional spatial relationship with the streetscape as typically found in rural village centers.

(c) Conclusion

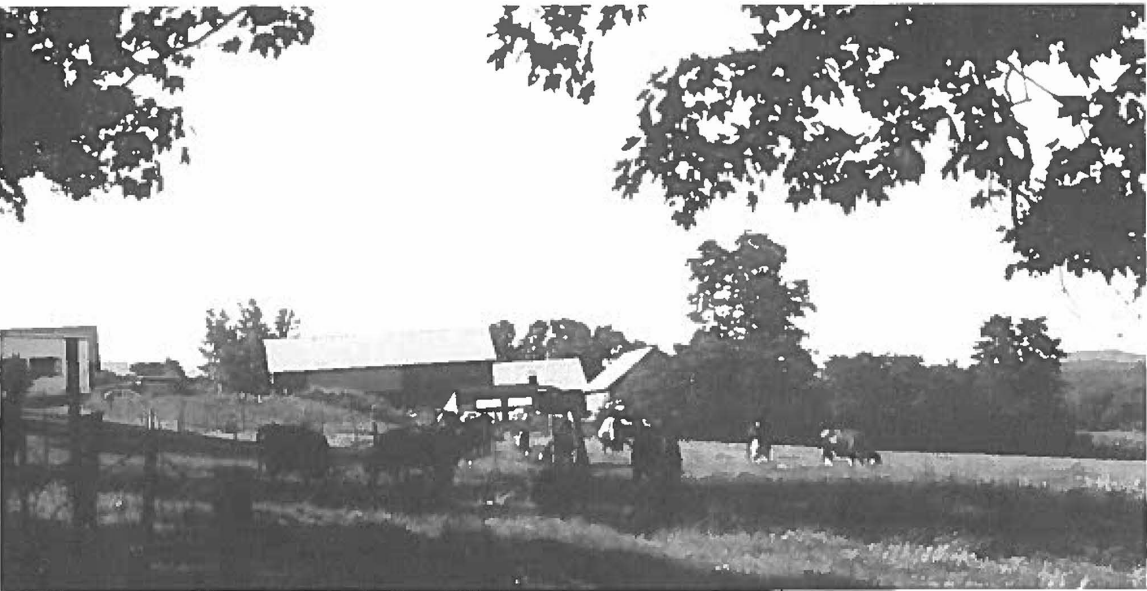
The previous strategies for the preservation of Hadley's town character rely on implementing a mix of traditional and innovative methods to improve the design and direction of land use. Flexibility is the key, however, because these strategies must be constantly updated as conditions change. However, with strong administrative backing of strong land use regulations, Hadley could emerge from the present development boom without completely losing its unique town character and its enviable quality of life.

3. Planning Strategies for the Integration of New Development in Gill

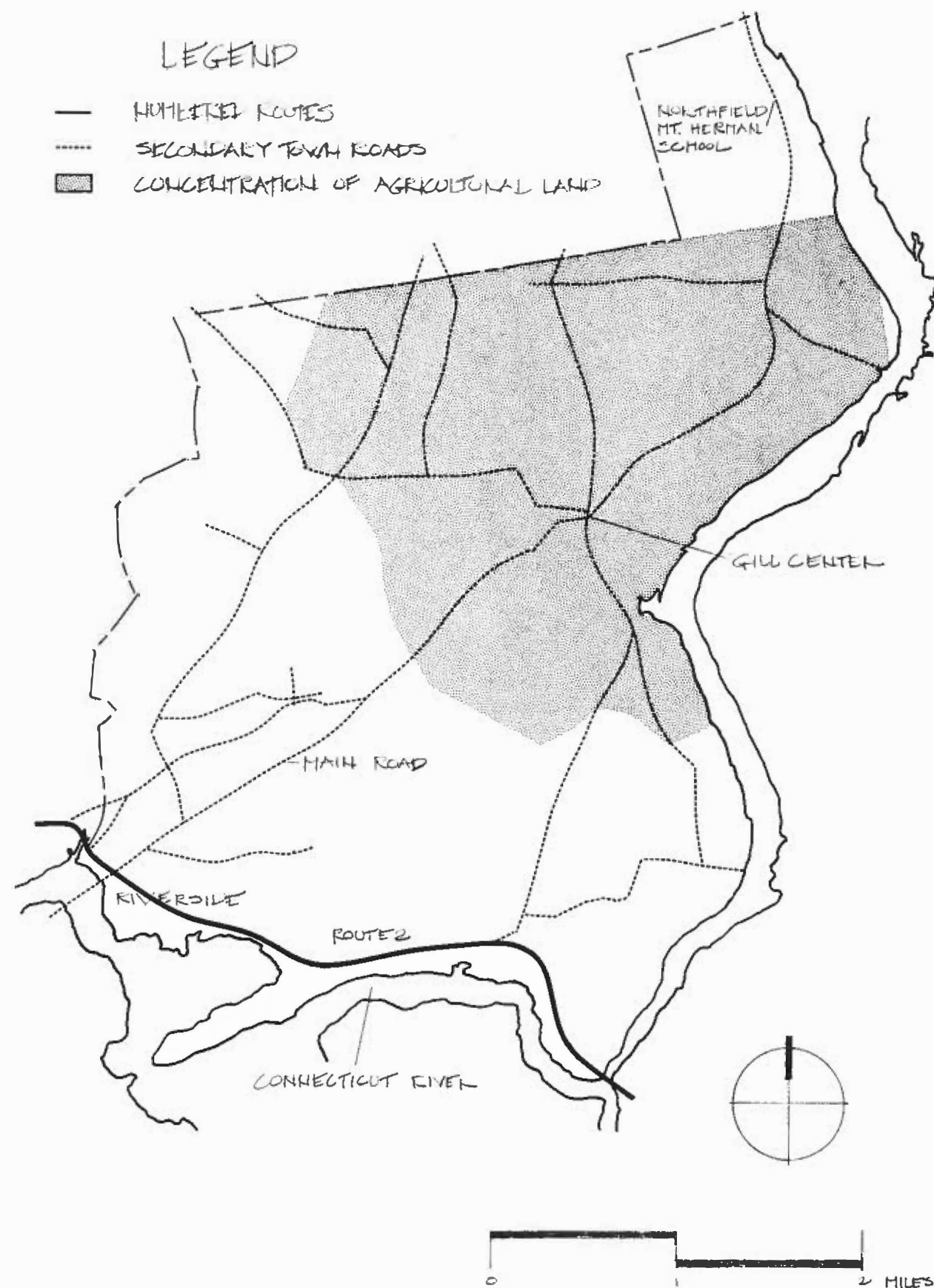
3.1 The Town of Gill

Gill possesses a distinctive town character which, although in many ways is similar to Hadley's, presents different challenges and opportunities. Gill's greater distance from expanding employment centers has largely insulated it from the development pressures experienced by many of the Valley towns further to the south. However, residential subdivisions and commercial developments have begun to make their mark on the townscape. The influence of rising land costs in surrounding areas and an increased trend for long-range commuters from the Boston metropolitan region to settle in this area have increased demand for property in Gill.

One large reason for this growing demand is the fact that the general public perceives that the "quality of life" is superior in small rural towns such as Gill, where residents know each other and extensive development has not intruded on the natural surroundings. Gill is a thoroughly rural community with rolling, wooded hills where newcomers feel they can escape the bustle of the late 20th century for an earlier and simpler era. To maintain this quality of life and town character, Gill will have to undertake some serious and innovative land-use planning to strengthen its land use regulations.



Cattle grazing on a farm in Gill.



Map 4: Town of Gill Showing Primary Agricultural Areas.

A. Administrative Strategies

Gill is a small town of approximately 1,350 people, with a very modest municipal budget and no currently available funds for hiring full-time professional assistance. It would benefit greatly by enrolling in the Massachusetts Executive Office of Communities and Development's "administrative assistant circuit rider program." This program could provide day-to-day administrative and grant-writing help. It would not, however, provide Gill with the planning support it needs to deal effectively with anticipated demands of development. This could be best accomplished by hiring a part-time planner, preferably shared with one or two other towns. A planning consultant is not advisable at this point, since Gill's long-term planning needs would benefit from the kind of continuity that only a permanent employee could provide.

B. Land Planning Strategies

(1) Open Space Protection

Long-term protection of open space (considered in its broadest sense and comprising both farm fields and woodlands) is essential if Gill's outstanding rural character is to be conserved for succeeding generations to enjoy. Farmland is scattered throughout most of the town, with large concentrations occurring along the Connecticut River to the east and in the north central section (please see accompanying map). At present, none of Gill's farms are protected under the state's Agricultural Preservation Restriction program and, therefore, could be converted to other uses at any time.

Because townspeople agree that both the open farmland and the wooded areas are important to Gill's character, and since extensive areas of land are actively logged (for firewood and commercial lumber), it is important that the continuation of these conditions be reflected in any new land-use bylaws. Gill's landscape is dominated by woodlands and forest ecosystems, in great contrast to Hadley which is dominated by a sweeping, open agricultural landscape. The "Farmland/Open Space Conservation and Development Bylaw," as presented at the end of this manual, could be modified to meet these needs by including criteria for timber cutting of more than 5 acres of land in any 10 year period such as: 1) cutting only under a forest management plan approved by a certified forester; 2) allowing the cutting of more than five acres provided there is the intention and following act of creating agricultural land; and 3) allowing the cutting of timber stands of more than five acres for recreational uses, upon the approval of a site plan which is in accordance with the provisions of the Site Plan Review process.

The advantages of such a bylaw to both the town and landowners are great. Land owners can receive full equity value for their properties when they wish to sell, while preserving a portion of it as farmland or open space. For the town, the advantages include: reduced road maintenance costs, protected open space that preserves rural character, protection of the agricultural and silvicultural economic base, and retention of the quality of life of which Gill is so proud.

(2) Commercial Development

At present, Gill's zoning bylaws allow a very wide range of new commercial development in all parts of town by Special Permit, with the exception of the Riverside "Village Residential" District. While this type of zoning has been reasonably effective in controlling certain small businesses and "cottage" industries in the past, it is becoming less appropriate now that Gill is experiencing increased interest as a potential commercial site. Local voters have taken the first step in dealing with this challenge by adopting a Site Plan Review bylaw. This bylaw ensures that proposed developments meet minimum requirements in siting and safety, while protecting neighbors from adverse impacts and preserving the character of the town. However, this measure will not, by itself, fully protect the town from adverse commercial development. To avoid the problems arising from adjacent incompatible land uses (such

as residential and commercial or light industrial uses), Gill must consider establishing separate business districts.

For example, traveller- and service-oriented enterprises should probably be limited to certain lengths of Route 2 and Main Road. Many of the establishments presently located along Route 2 serve tourists, while the natural location for commercial developments designed to serve the expanding resident population is the intersection of Route 2 and Main Road. It is in these two areas that service-oriented enterprises should be located, in order that a new commercial center may be established.

However, commercial zoning should definitely not be permitted to extend along the full length of Route 2. Allowing this to happen would clearly repeat the mistakes of other communities which have let long, ugly commercial "strips" to grow up along well travelled roads. A much more effective approach that would also help retain the highway's scenic character would be to focus commercial zoning along two segments of Route 2: from the junction of Main Road to a point just west of Barton Cove, and a similar length between Barney Hale Road and the French King Bridge (as shown on the accompanying map). These are the areas most appropriate for, and conducive to, commercial development in terms of traffic flow. The node at Route 2 and Main Road could be enlarged by extending the commercial district north along Main Road to include the intersection of South Cross Road.

Areas most favorable for the development of light industry include the intersection of South Cross and Main Roads, and that part of North Gill which lies near Route 10 in Bernardston.

In conjunction with the development of zoning districts, it is strongly recommended that the town thoroughly review its Special Permit Guidelines and its signage regulations.

The Special Permit Guidelines in the present zoning bylaws are vague at best. For example, "adequacy of town services" could be expanded to include concerns relating to town sewage treatment capacity; town water usage and availability; fire, police and rescue availability; and road and infrastructure maintenance. All of these pose serious issues in a proposed development, but may be overlooked or legally challenged if not explicitly defined in the Special Permit granting criteria.

(3) Preservation of Scenic and Cultural Resources

Gill possesses a very rich legacy of historic, cultural and scenic resources including many strong examples of vernacular farm architecture, outstanding riverscapes, impressively steep hills offering fine long views over the Valley, and a very picturesque nucleus of traditional buildings grouped around the town green.

The first step in retaining Gill's heritage is to conduct an inventory of the town's historic structures. Following this, a successful multiple resource nomination to the National Register of Historic Places, recognizing Gill's uniquely undisturbed landscape, would protect the town from the adverse impacts of state- and federally-funded projects. It would also bring recognition of the town's rich cultural and scenic heritage, and lay the foundation for a locally-administered regulatory historic district, written with the consent and understanding of local property owners.

Specific Tools for Integrating New Development

This section of the design manual contains descriptions of four different planning techniques to help public officials and private developers successfully integrate new construction into traditional townscapes and rural landscapes. Specific "model" by-law language is provided with regard to farmland/open space protection, sign control, and site plan review. The following pages provide practical advice on harmonizing new development into small New England communities, and contains design guidelines, performance standards, and a descriptive narrative of the innovative planning approaches recommended by the Center for Rural Massachusetts.

Introduction to the Use of Site Plan Review

Most towns eventually realize that zoning by itself is unable to ensure that new development is integrated sensitively into their community. Zoning, which regulates land-use location and density, does not address the visually important design issues which have such a significant impact upon our townscapes. Exerting some positive influence over the design of new developments is often essential if a town's traditional image is to be protected and reinforced.

The need for improved techniques to regulate how new developments are laid out and designed stems from the fact that most small towns lack sufficiently complete guidelines to ensure that new or expanded uses will fit harmoniously into their communities. For example, typical zoning bylaws in small rural towns allow all or most commercial uses "by right" in their business districts, with no further standards except for lot size, minimum setbacks, and typically a few sentences regarding signs and parking. The pitfalls of this almost "laissez-faire" approach are obvious when one pauses to consider the range of unneighborly, unsightly, or unsafe conditions which can easily be created by adjacent business premises (involving signage, traffic entrances, parking, drainage, landscaping, outdoor storage, noise, odors, glare, etc.).

In response to the chaos which often ultimately results from the above approach, other towns have reacted by requiring Special Permits for some of the more obviously incompatible types of uses (e.g., gasoline stations, kennels). However, in so doing, they have often failed to provide clear guidelines to the Special Permit Granting Authority, so that petitioners, abutters, and board members may all know the parameters of what is approvable and what is not. All too often the bylaw guidelines are so broad and unspecific that board members are almost invited to exercise their personal opinions, which can lead to arbitrary and capricious decisions.

Fortunately, a much better middle-ground does exist, one that offers towns more comprehensive control over new developments, while reducing the danger of "unbridled discretion" exercised by boards working from inadequate bylaws which are vague, simplistic, or lack necessary detail.

In Massachusetts, Site Plan Review is most often conducted as a modified Special Permit process. In order for the number of "loop-hole opportunities" to be minimized, towns are advised to require this type of review for most types of non-residential uses. The model bylaw in this manual contains general review criteria, supplemented by more specific design guidelines and performance standards to provide greater detail and clarity. In order to provide facts sufficient to enable the reviewing board (and other interested parties) to fully understand the implications of the proposed development, a list of items required for submission by the applicant is included in an appendix. Consistency in site plan submission packages will ensure that all relevant information is available to the reviewing board, so that a well-informed decision may be rendered.

Model Site Plan Review Bylaw

A. Purpose

This section of the town bylaw is enacted under the authority of Chapter 40A of the Massachusetts General Laws to protect the health, safety, convenience and general welfare of the inhabitants of the Town. The Site Plan Review bylaw regulates the development of structures and sites in a manner which considers the following concerns and, where necessary, requires modification of development proposals to eliminate or minimize potential problems and nuisances. The principal areas of concern are:

- a) the balancing of landowners’ rights to use their land, with the corresponding rights of abutting and neighboring landowners to live without undue disturbances (e.g., noise, smoke, fumes, dust, odor, glare, stormwater runoff, etc.);
- b) the convenience and safety of vehicular and pedestrian movement within the site, and in relation to adjacent areas or roads;
- c) the adequacy of waste disposal methods and protection from pollution of surface or ground-water; and
- d) the protection of historic and natural environmental features on the site under review, and in adjacent areas.

B. Projects Requiring Site Plan Review

No permit for the construction, exterior alteration, relocation, occupancy, or change in use of any building shall be given and no existing use shall be established or expanded in floor area except in conformity with a site plan approved by the Planning Board. Site Plan Review shall also be required for the resumption of any use discontinued for more than two (2) years, or for the expansion of any existing use. "Expansion" shall include a floorspace increase of twenty-five percent (25%) or more within any 10-year period, or the introduction of new materials or processes not previously associated with the existing use. Required approval includes proposals for commercial, industrial, office, multiple dwelling residential developments, municipal, institutional, utility, fraternal or recreational purposes.

C. Exemptions from Site Plan Review

Site Plan Review shall not be required for:

- a) the construction or enlargement of any single family or two family dwelling, or building accessory to such dwelling;
- b) the construction or alteration of any building used exclusively for agriculture, horticulture, or floriculture;
- c) construction or alteration providing for not more than two hundred (200) sq. ft. total floor area after construction
- d) customary home occupations as defined in the zoning bylaws.

D. Procedure

1. An applicant for Site Plan Review under this section shall file with the Planning Board, at a regularly scheduled meeting, five (5) copies each of the site plan documents (see Appendix A for requirements). The Planning Board Chair shall acknowledge receipt of these plans by endorsing them with his/her signature and the date of receipt. A copy of the site plan shall be given by the applicant to the Town Clerk to be kept on file.

2. For developments also requiring Special Permits, the Board shall obtain with each submission a deposit sufficient to cover any expenses connected with the public hearing and review of the plans. The Planning Board is authorized to retain a registered professional engineer, architect, or landscape architect, or other professional consultant to advise the Board on any or all aspects of the site plan. The cost of this advice shall be borne by the applicant.

3. After reviewing the application for completeness and determining that it is not incomplete, the Planning Board shall transmit to the Conservation Commission, Board of Health, Historical Commission, and Building Inspector, and other boards as deemed necessary, one copy each of the site plan documents. The Boards have up to twenty-one (21) days for as-of-right developments, and forty-five (45) days for Special Permit developments, to submit recommendations in writing to the Planning Board concerning:

- a) the adequacy of the data and procedures used by the applicant to determine the impacts of the proposed development;
- b) the effects of the projected impacts of the proposed development; and
- c) the recommended conditions or remedial measures to accommodate or mitigate the expected impacts of the proposed development.

Failure of an agency to report within the allotted time shall be interpreted as non-opposition to the submitted site plan.

4. For proposals not requiring a Special Permit, the Planning Board shall deliver its decision in writing to the Building Inspector within thirty (30) days after determining that the application is complete, to allow the issuance of a building permit. For proposals also requiring Special Permits, the Planning Board shall hold a public hearing within sixty-five (65) days of the receipt of an application and shall take final action within ninety (90) days from the time of hearing, as provided in MGL Chapter 40A, Sections 9 and 11. The Planning Board’s final action, rendered in writing, shall consist of either:

- a) approval of the site plan based upon a determination that the proposed plan will constitute a suitable development and is in compliance with the standards set forth in this Bylaw;
- b) disapproval of the site plan based upon a determination that the proposed project does not meet the standards for review set forth in this Bylaw; or
- c) approval of the site plan subject to any conditions, modifications and restrictions as required by the Board which will ensure that the project meets the Standards for Review.

E. Submission Requirements

A site plan shall be prepared by a registered professional engineer, architect, or landscape architect at a scale of 1 inch equals 20 feet, on standard 24" x 36" sheets, with continuation on 8 1/2" x 11" sheets as necessary for narrative.

A site plan shall include all data, details, and supporting information as outlined in Appendix A.

F. Standards for Review

The Planning Board shall review the site plan and supporting documents, taking into consideration the reasonable fulfillment of the objectives listed below. Detailed design guidelines and performance standards shall be adopted by the Planning Board to guide decisions with respect to these objectives, and to help ensure consistency in the review of all applications.

1. Legal

Conformance with the provisions of the bylaws of the Town, the General Laws of Massachusetts, and all applicable rules and regulations of state and federal agencies.

2. Traffic

Convenience and safety of both vehicular and pedestrian movement within the site and in relationship to adjoining ways and properties.

3. Parking

Provisions for the off-street loading and unloading of vehicles incidental to the normal operation of the establishment, adequate parking, adequate lighting, and internal traffic control.

4. Town Services

Reasonable demands placed on Town services and infrastructure.

5. Pollution Control

Adequacy of methods for sewage and refuse disposal, and the protection from pollution of both surface waters and groundwater. This includes minimizing soil erosion both during and after construction.

6. Nuisances

Protection of abutting properties and Town amenities from any undue disturbance caused by excessive or unreasonable noise, smoke, vapors, fumes, dust, odors, glare, stormwater runoff, etc.

7. Existing Vegetation

Minimizing the area over which existing vegetation is to be removed. Where tree removal is required, special attention shall be given to planting of replacement trees.

8. Amenities

The applicant’s efforts to integrate the proposed development into the existing landscape through design features such as vegetative buffers, roadside plantings, and the retention of open space and agricultural land.

9. Town Character

The building setbacks, area and location of parking, architectural compatibility, signage, and landscaping of the development, and how these features harmonize with the surrounding townscape and the natural landscape.

G. Enforcement

1. The Planning Board may require the posting of a bond or other similar performance guarantee to ensure compliance with the plan and stated conditions of approval. It may suspend any permit or license when work is not performed as required.

2. Any Special Permit issued under this section shall lapse within one (1) year if a substantial use thereof has not commenced, except for good cause. The time required to pursue and await determination of a judicial appeal pursuant to Chapter 40A of the General Laws shall be included within the one (1) year time limit.

3. The Planning Board may periodically amend or add rules and regulations relating to the procedures and administration of this by-law, by majority vote of the Board, after conducting a public hearing to receive comments on any proposed revisions. Such hearing shall be advertised once in a newspaper of general local circulation, at least seven (7) days prior to the hearing date.

Appendix A:

Submission Requirements

The site plan shall include the following data, details, and supporting plans. The number of pages submitted will depend on the proposal’s size and complexity. All of the requirements must be met in each plan, with notations explaining the reasons for any omissions.

Site plans shall be prepared by a registered professional engineer, architect, or landscape architect at a scale of 1 inch equals 20 feet, on standard 24" x 36" sheets, with continuation on 8 1/2" x 11" sheets as necessary for written information.

Items required for submission include:

1. Name of the project, boundaries, and locus maps showing site’s location in town, date, north arrow and scale of the plan.

2. Name and address of the owner of record, developer, and seal of the engineer, architect or landscape architect.

3. Names and addresses of all owners of record of abutting parcels and those within three hundred (300) feet of the property line.

4. All existing lot lines, easements, and rights-of-way. Include area in acres or square feet, abutting land uses, and the location and use of structures within three hundred (300) feet of the site.

5. The location and use of all existing and proposed buildings and structures within the development. Include all dimensions of height and floor area, and show all exterior entrances, and all anticipated future additions and alterations.

6. The location of all present and proposed public and private ways, parking areas, driveways, sidewalks, ramps, curbs, fences, paths, landscaping, walls, and fences. Location, type, and screening details for all waste disposal containers shall also be shown.

7. The location, height, intensity, and bulb type (e.g., fluorescent, sodium incandescent) of all external lighting fixtures. The direction of illumination and methods to eliminate glare onto adjoining properties must also be shown.

8. The location, height, size, materials, and design of all proposed signage.

9. The location of all present and proposed utility systems including:

- sewage or septic system;
- water supply system;
- telephone, cable and electrical systems; and
- storm drainage system including existing and proposed drain lines, culverts, catch basins, headwalls, endwalls, hydrants, manholes, and drainage swales.

The Planning Board may also request soil logs, percolation tests and storm run-off calculations for large or environmentally-sensitive developments.

10. Plans to prevent the pollution of surface or groundwater, erosion of soil both during and after construction, excessive run-off, excessive raising or lowering of the water table, and flooding of other properties, as applicable.

11. Existing and proposed topography at a two (2) foot contour interval. All elevations shall refer to the nearest United States Coastal and Geodetic Bench Mark. If any portion of the parcel is within the 100 year flood-plain, the area will be shown, and base flood elevations given. Indicate areas within the proposed site and within fifty (50) feet of the proposed site, where ground removal or filling is required, and give its approximate volume in cubic yards.

12. A landscape plan showing all existing natural land features, trees, forest cover and water sources, and all proposed changes to these features including size and type of plant material. Water sources will include ponds, lakes, brooks, streams, wetlands, floodplains, and drainage retention areas.

13. Zoning district boundaries within five hundred (500) feet of the site's perimeter shall be drawn and identified on the plan.

14. Traffic flow patterns within the site, entrances and exits, loading and unloading areas, curb cuts on the site and within one hundred feet of the site.

The Planning Board may require a detailed traffic study for large developments or for those in heavy traffic areas to include:

- the projected number of motor vehicle trips to enter or leave the site, estimated for daily and peak hour traffic levels;
- the projected traffic flow pattern including vehicular movements at all major intersections likely to be affected by the proposed use of the site;
- the impact of this traffic upon existing abutting public and private ways in relation to existing road capacities. Existing and proposed daily and peak hour traffic levels as well as road capacity levels shall also be given.

15. For new construction or alterations to any existing building, a table containing the following information must be included:

- area of building to be used for a particular use such as retail operation, office, storage, etc.;
- maximum number of employees;
- maximum seating capacity, where applicable; and
- number of parking spaces existing and required for the intended use.

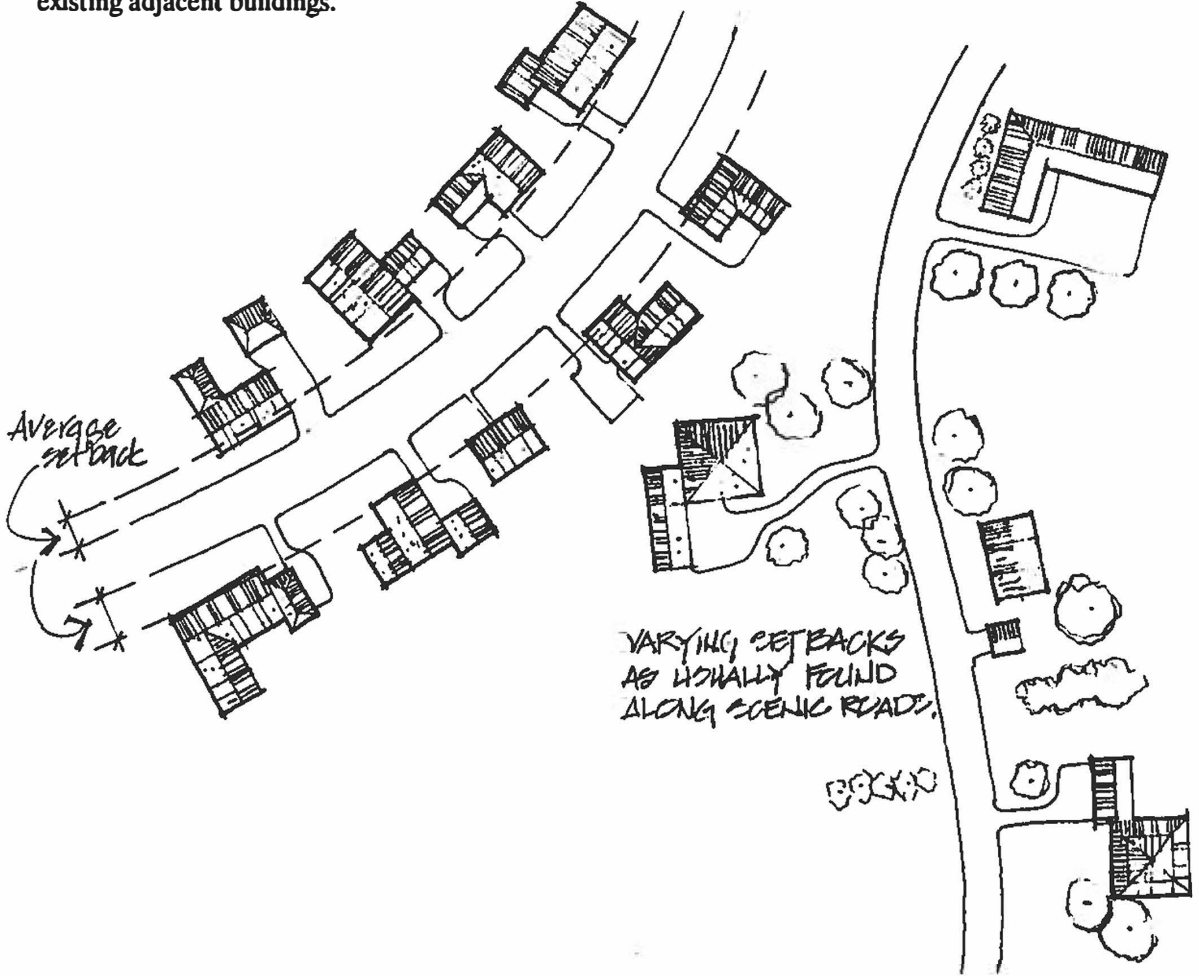
16. Elevation plans at a scale of 1/4" = 1' for all exterior facades of the proposed structure(s) and/or existing facades, plus addition(s) showing design features and indicating the type and color of materials to be used.

Model Design Guidelines and Performance Standards for the Review of Site Plans in Rural Towns

1. Setbacks

a. Conforming Lots

Where existing buildings express a traditionally modest (pre-zoning) front setback, creating a characteristically close relationship with the street (as in village and town centers and along their approach roads), it is highly desirable to continue this pattern in order to retain the area's character. Therefore, the maximum setback of new construction should harmonize with the average setbacks of existing adjacent buildings.



Outside of the areas of generally uniform building setback (where existing structures are located at various distances from the roadway), front setbacks may vary to a greater degree, and principal buildings shall generally be located within 40 feet of the front lot line unless there are substantial counter-balancing considerations (such as irregular topography, wetlands, or the preservation of natural rural features, including pastures, cropland, meadows, or timber stands). In all instances, parking shall be excluded from such areas, between the principal building and the roadway(s).

Where commercial development is proposed adjacent to a residential use, a side yard setback of 30 feet shall be observed for buildings, parking, or storage. This area is to be used as a buffer zone and shall be landscaped according to the standards listed below in Section 2 (Parking Areas).

b. Non-Conforming Lots

Where the proposed expansion or reconstruction on a non-conforming lot fails to meet the above setback requirements, increased screening shall be provided to lessen the effect on adjoining lots. In no case shall the expansion of the existing use be allowed to extend closer than 10 feet to any lot line. Where the non-conforming lot borders a residential or institutional use, setbacks of between 10 and 20 feet will require a solid wooden fence, no less than five feet in height, to form an effective visual screen. Landscaping in the form of deciduous and evergreen trees and shrubs will be required on both sides of the fence.

For side and rear yard setbacks of between 20 and 30 feet, an increased number of both deciduous and evergreen shrubs, growing to a mature height of at least five feet, will be required, in a planting bed of at least 10 feet wide.

2. Parking

Parking lots shall be provided only at the side or to the rear of buildings.

The visual impact of parking areas upon town character can be easily reduced through landscaped buffers, whose width at the roadside edge shall be based upon the length of the parking area exposed to the street (but which shall in no case be less than six (6) feet in width).

Locating buildings near the front edge of parking lots reduces the amount of required landscaping, as it minimizes the exposed area of parking.

Parking lots containing ten or more spaces shall be planted with at least one tree per eight spaces, no smaller than 2" caliper (trunk diameter at chest height), each tree being surrounded by no less than 40 sq. ft. of permeable, unpaved area.

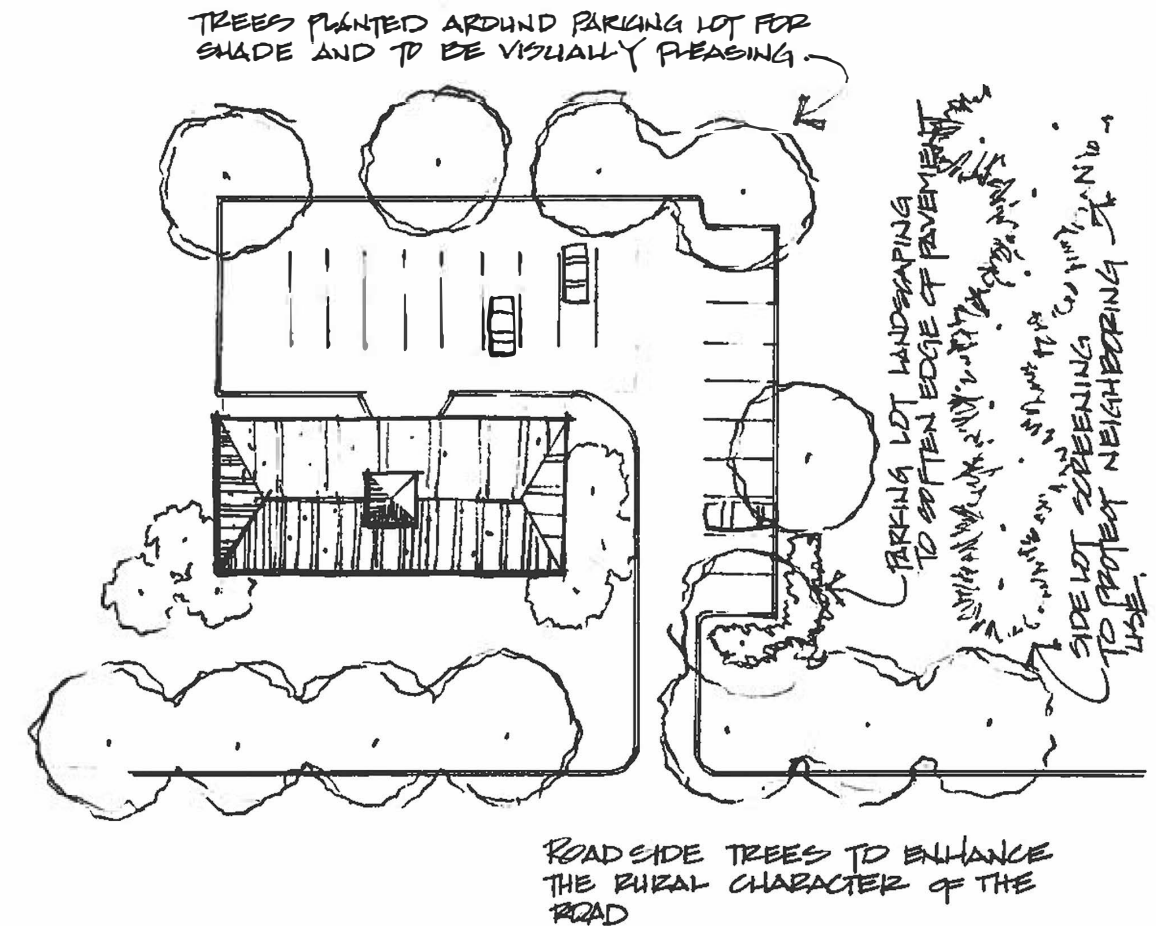
Parking areas must also be screened along lot lines bordering institutional or residential uses. Screening shall consist of a landscaped area at least six (6) feet wide, densely planted with a mixture of deciduous and evergreen trees and shrubs, and shall create an effective visual barrier. All trees shall be a minimum of 2" caliper (trunk diameter) when planted. Native trees and shrubs shall be planted wherever possible, in order to capture the "spirit of the locale" through indigenous species (such as lilac, viburnum, day lillies, ferns, red-twig dogwood, oak, maple, sycamore, linden, hawthorne, birch, shadbush, etc.).

In instances where healthy plant material exists on a site prior to its development, in part or in whole, for purposes of off-street parking or other vehicular use areas, the Planning Board may adjust the application of the above mentioned standards to allow credit for such plant material if, in its opinion, such an adjustment is in keeping with and will preserve the intent of these standards.

3. Screening

Open storage areas, exposed machinery, and outdoor areas used for the storage and collection of rubbish, must be visually screened from roads and surrounding land uses. Suitable types of screening include opaque wood fences and dense evergreen hedges of five (5) feet or more in height. Where evergreen hedges are proposed, a temporary fence should be built to provide screening until the evergreens are of sufficient height.

In locations where potential health or safety hazards may arise (such as rubbish storage/collection areas), a solid wooden fence, six (6) feet in height is required (to deter children and animals from entering the premises).



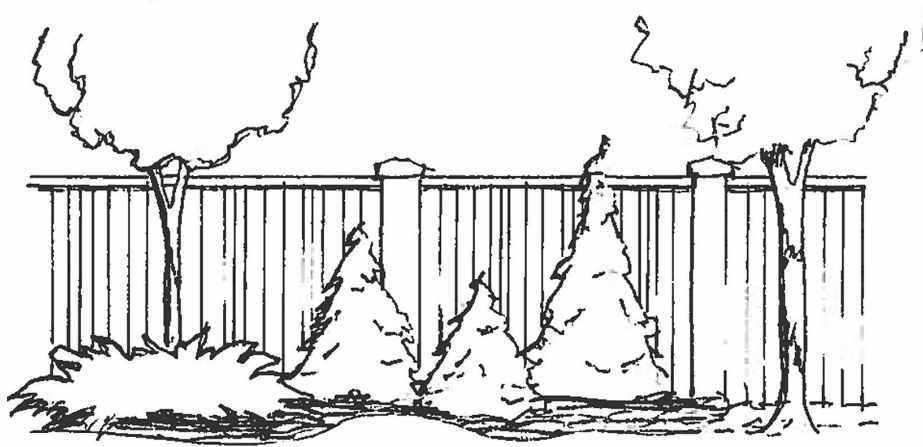
Where new fencing would create a continuous surface greater than ten (10) feet in length, it shall be softened visually with tree and shrub plantings.

4. Roadside Trees

Because roadside trees are extremely important to the character of any town, removal of trees over five (5) inches in diameter (at breast height) must be absolutely minimized, especially along roadways. Removal of existing trees can usually be lessened by shifting the site of the building, parking lot, or the entrance/exit drive. In addition, planting of new or replacement trees every thirty (30) feet along side roads is encouraged, to reinforce rural character. Such trees should be deciduous hardwoods, such as maple, oak, linden, sycamore, etc., (not conifers or flowering ornamentals), in order that a stately atmosphere may ultimately be created.

Roadside tree plantings should meet the following criteria:

- cast moderate to dense shade in summer;
- long-lived, i.e., over 60 years;
- be tolerant of pollution and direct or reflected heat;
- require little maintenance, by being mechanically strong and insect- and disease-resistant;
- be able to survive two (2) years with no irrigation after establishment; and
- be of native origin, provided that they meet the above criteria.

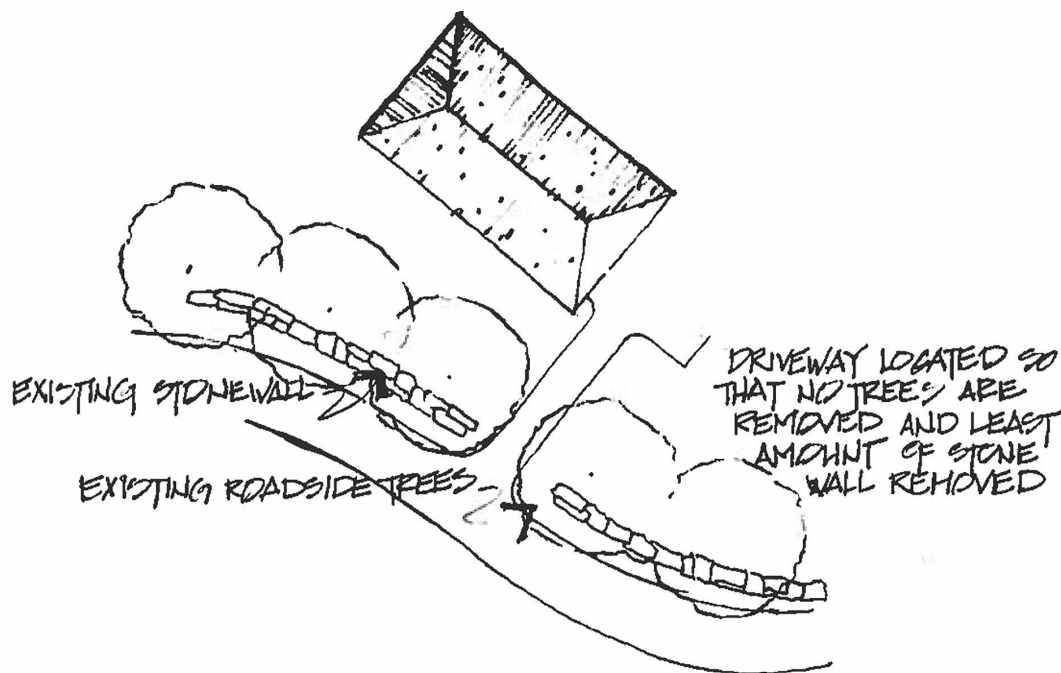


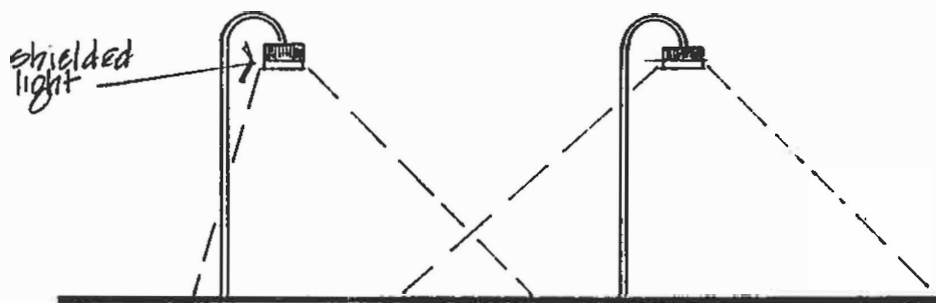
TREES AND SHRUBS PLANTED TO VISUALLY
SOFTEN THE SOLID WOODEN FENCE.

Where stone walls exist, care should be taken to disturb these as little as possible, since they also act to retain the character of country roads. In some instances (particularly where the town has designated the road under the state's Scenic Roads Program), improvements undertaken by the State Department of Public Works can include relocation of such walls.

5. Lighting

Lighting must be controlled in both height and intensity to maintain rural character. Under no circumstances may the light level at the lot line exceed 0.2 foot-candles, measured at ground level. To achieve this, luminaires shall be shielded to prevent light shining beyond the lot lines onto neighboring properties or public ways.





LIGHT STANDARDS ARE DESIGNED SO CONES OF LIGHT OVERLAP TO PROVIDE AN EVEN LEVEL OF LIGHTING.

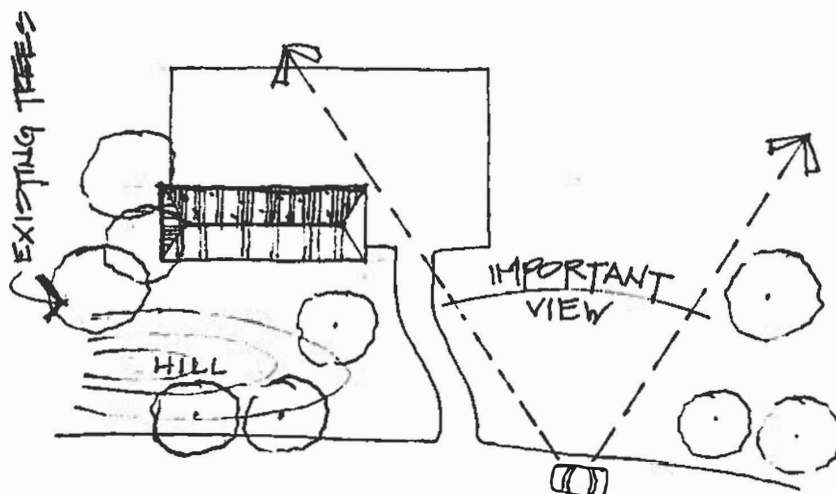
Where there is a mix of residential and commercial uses, light standards are restricted to a maximum of twenty (20) feet in height. In addition, all lighting (except for security purposes) should be turned off between 11 p.m. and 6 a.m. Exceptions will be granted for those businesses which are operating during these hours.

6. Placement of Buildings

Buildings should be sited so that obstruction of views from the public ways will be minimized. This can be achieved by taking advantage of topographic changes or existing vegetation.

7. Facades

It is particularly important that new construction meet minimum design criteria in order that it may blend with the surroundings. New construction throughout town should be compatible with surrounding properties, in terms of formal characteristics such as height, massing, roof shapes and window proportions.



BUILDING LOCATED OUT OF THE WAY OF A BEAUTIFUL VIEW OF THE COUNTRYSIDE, TAKING ADVANTAGE OF A SMALL HILL AND EXISTING TREES TO SCREEN THE BUILDING.

Where new construction is surrounded by existing historic buildings, building height and exterior materials shall be harmonious with those of adjacent properties. In the interests of maintaining a sense of history, vertical siding shall be discouraged, and synthetic siding should imitate the character and dimensions of traditional clapboards. Masonry block buildings should be faced in an appropriate material, such as horizontal wooden siding or brick of a consistent traditional red color (not "used" brick or any varieties doctored to appear old), and have pitched roofs.



AN EXAMPLE OF A BUILDING OUT OF SCALE AND CHARACTER WITH THE EXISTING BUILDINGS ON EITHER SIDE.

8. Signage

a. "Commercial Roadsides"

Since Commercial Roadside districts act as entry ways to older and more densely settled areas of town, signage should be compatible with that in the Village Center district. The goal of regulation in this area is to encourage legible signage for commercial facilities and to identify the goods and services available, while deterring excessive visual competition which lowers the quality of the townscape. Since this district contains primarily auto-oriented facilities, special care must be taken with signage to avoid the clutter and confusion associated with commercial "strip" development, and to avoid becoming a center of visual blight.

- Since multi-occupant structures are common in Commercial Roadside districts, the number of signs allowed per structure should be limited as follows:
- 1) there shall be no more than three (3) different types of signs on a building; and
 - 2) if the building contains more than three (3) occupants, there may be only one exterior sign per occupant, plus one sign for the entire complex.

Sign landscape design is very important in this district. Trees and shrubs help to integrate conspicuous, free-standing signs into the landscape, softening their larger scale.

Identification of businesses from moving cars must be balanced with the visual impact of large signs on the rural landscape. Restraint in sign design can aid in identification, since small, simpler signs identify businesses with less confusion, limit counter-productive sign competition, and protect the quality of the landscape.

b. "Scenic Roadsides" (Remainder of the Town)

The most important goal in Scenic Roadside areas is to maintain their primarily rural, residential character. Restriction of sign size and numbers reduces visual conflicts, and helps to achieve the above objective.

As businesses in these areas tend to be small and separate, fewer identification signs are needed. The guidelines for landscaping of signs are similar to those above, although to be compatible with the rural character of the area, free-standing signs must be kept small.

9. Water Quality

All outdoor storage facilities for fuel, chemicals, or industrial wastes, and potentially harmful raw materials, must be located on impervious pavement, and shall be completely enclosed by an impervious dike high enough to contain the total volume of liquid kept in the storage area, plus the accumulated rainfall of a fifty (50) year storm. This requirement is intended to prevent harmful materials from spilling and seeping into the ground, contaminating the ground water. Storage tanks for "home heating oil" and diesel fuel, not exceeding two-hundred seventy five (275) gallons in size, may be exempted from this requirement provided that there is no seasonal high water table (within four (4) feet of the surface), and that rapidly permeable sandy soils are not involved.

10. Dust, Fumes, Vapors, Gases and Odors

Emission of dust, dirt, flyash, fumes, vapors or gases which could be injurious to human health, animals, or vegetation; detrimental to the enjoyment of adjoining or nearby properties; or which could soil or stain persons or property, at any point beyond the lot line of the commercial or industrial establishment creating that emission shall be prohibited. In addition, no land use or establishment shall be permitted to produce harmful, offensive, or bothersome odors, scents, or aromas, (such as, but not limited to, those produced by manufacturing processes, food preparation, food processing, fish sales, rendering, fermentation processes, decaying organic matter, and incinerators) perceptible beyond their lot lines, either at ground or habitable elevation. The location and vertical height of all exhaust fans, vents, chimneys, or any other sources discharging or emitting smoke, fumes, gases, vapors, odors, scents or aromas shall be shown on the plan, with a description of the source materials.

11. Glare

No land use or establishment shall be permitted to produce a strong, dazzling light or reflection of that light beyond its lot lines onto neighboring properties, or onto any town way so as to impair the vision of the driver of any vehicle upon that town way. All such activities shall also comply with applicable Federal and State regulations.

12. Noise

- a) Excessive noise at unreasonable hours shall be required to be muffled so as not to be objectionable due to intermittance, beat frequency, shrillness, or volume.
- b) The maximum permissible sound pressure level of any continuous, regular or frequent source of sound produced by any activity regulated by this bylaw shall be as established by the time period and type of land use district listed below. Sound pressure levels shall be measured at all major lot lines, at a height of at least four (4) feet above the ground surface.

Sound from any source controlled by this bylaw shall not exceed the following limits at the property line of said source.

Sound Pressure Level Limits Measured in dB(A)'s:

	7 a.m.-10 p.m.	10 p.m.-7 a.m.
Industrial Districts	70	65
Commercial Districts	65	55
Residential Districts	55	45

1. Where the emitting and receiving premises are in different zones, the limits governing the stricter zone shall apply to any regulated noise entering that zone.
2. The levels specified may be exceeded by 10dB(A) for a single period, no longer than 15 minutes in any one day.

c) Noise shall be measured with a sound level meter meeting the standards of the American National Standards Institute, ANSI S1.2-1962 "American Standard Meter for the Physical Measurements of Sound."

d) These noise regulations are enforceable by law enforcement officers and by the Code Enforcement Officer (who may measure noise levels and who shall report documented violations to the police).

13. Refuse Disposal

The applicant shall provide for the disposal of all solid and liquid wastes on a timely basis and in an environmentally safe manner. The Board shall consider the impact of particular industrial or chemical wastes or by-products upon the town's disposal method and/or disposal area (in terms of volume, flammability or toxicity) and may require the applicant to dispose of such wastes elsewhere, in conformance with all applicable State and Federal regulations. The Board may require the applicant to specify the amount and exact nature of all industrial or chemical wastes to be generated by the proposed operation.

14. Access Control

Subdivisions with frontage on state-numbered highways shall be designed into shared access points to and from the highway. Normally a maximum of two accesses shall be allowed (one ingress, one egress, for example), regardless of the number of lots or businesses served.

15. Storm Water Run-off

Surface water run-off shall be minimized and detained on-site if possible or practicable. If it is not possible to detain water on-site, downstream improvements to the channel may be required of the developer to prevent flooding caused by his project. The natural state of watercourses, swales, floodways, or rights-of-way shall be maintained as nearly as possible. The design period is the 50-year storm.

16. Erosion Control

Erosion of soil and sedimentation of watercourses and waterbodies shall be minimized by employing the following "best management" practices:

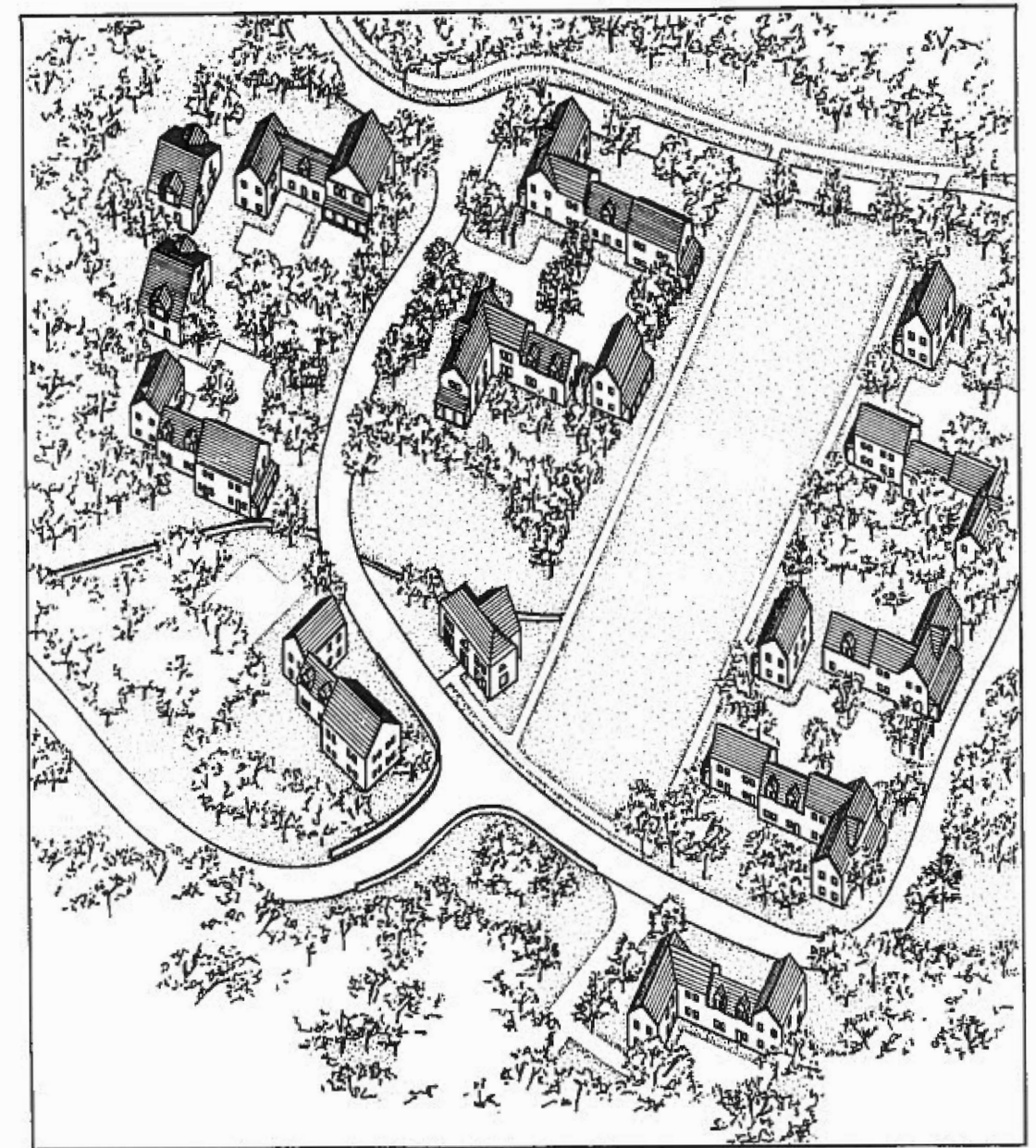
- a. stripping of vegetation, soil removal, and regrading or other development shall be accomplished in such a way as to minimize erosion;
- b. the duration of exposure of the disturbed area shall be kept to a practical minimum;
- c. temporary vegetation and/or mulching shall be used to protect exposed critical areas during development;

d. permanent (final) vegetation and mechanical erosion control measures shall be installed as soon as practicable after construction ends;

e. until a disturbed area is stabilized, sediment in run-off water shall be trapped by the use of debris basins, sediment basins, silt traps, or other acceptable methods as determined by the Planning Board;

f. the top of a cut or bottom of a fill section shall not be closer than ten (10) feet to an adjoining property, unless otherwise specified by the Planning Board. Extraction operations (sandpits, etc.) shall not be permitted within one-hundred (100) feet of any property line, except as provided for in the Zoning Bylaw; and

g. during grading operations, methods of dust control shall be employed wherever practicable.



Village style cluster housing development, incorporating traditional New England "connected farmhouse architecture" to provide affordable multi-family dwellings. Lincoln Meadows project, Lincoln, Mass. Architect: William Rawn Associates, Boston.

Signage and Its Effect on a Town

One of the most readily apparent aspects of town character is signage. Since signs are intended to be highly visible and attract attention, they often produce a lasting impression on visitors and provide an indication of the commercial health of a business district. Many town residents, business people, and town officials are not fully aware of the highly significant role signage plays in the image their town presents to residents and visitors alike.

Sign codes are enacted to help improve the visual appearance of towns, but many municipalities adopt inadequate regulations. Others do not make enforcement a high priority. The information presented below can be used to encourage better sign design through regulation and proper enforcement. The design standards presented in the following sections are intended to offer town residents and officials a basic introduction to the elements of signage, as well as to encourage both innovation and creativity in sign design. These guidelines should be regarded as flexible. Using the following as a guide, each town should develop its own regulations to reflect its unique character and heritage.

1. The Design and Placement of Signs

Some general design guidelines apply to all signs. They follow under the headings of sign types, simplicity, color, message, and size.

(a) Sign Types

The first step in sign design is selecting the most appropriate type of sign. The three most common types of signs are wall signs (those attached directly to a wall); projecting signs (those which are attached to the wall of a structure but which project out from it, usually at a 90 degree angle); and free-standing signs (those which have their own support anchored directly in the ground). For more detailed definitions of these and other signs, please see the "Definitions" section within the Model Signage Bylaw.

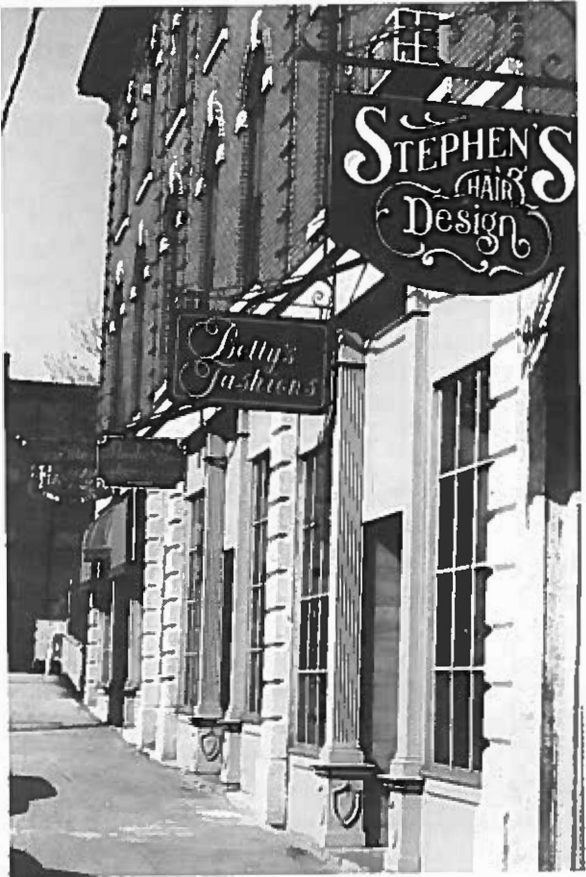
The choice of sign type depends upon the surroundings and the attention one desires to attract. For example, free standing signs are best used in situations where there is a large setback from the street, where the attention of people in fast-moving vehicles is being sought, or where there are several uses in one building or complex. Projecting signs and wall signs are best used where the attention of people in slow-moving cars or pedestrians is desired.

(b) Simplicity

Whatever sign type is used, simplicity is the key factor to good design and readability. An effectively designed sign utilizing bold, easily-recognized symbols and clear crisp lettering will identify a business or activity efficiently and attractively, enhance the area in which it is located, and complement the general appearance of the street and town. The most common problems in business districts are an overabundance of signs that are often excessively large, all of which contributes to "sign overload." This creates a visually chaotic situation in which no one gains the advantage, since the competing signs tend to cancel each other out in an unsuccessful bid to catch the buyer's eye.

(c) Color

Restraint should be exercised when selecting colors. On most signs, no more than three colors should be used: one for background (preferably dark), a contrasting color for the lettering, and a third color perhaps for emphasis (such as for borders, motifs, or shading lettering to give it a three-dimensional



look). Exceptions occur when an illustration is incorporated in the sign; in such cases it is important that complementary colors be used. In selecting the principle colors for a sign, colors which complement the general tone of the building should be chosen (unless they are inappropriate to the type of business being identified).

(d) Message

In deciding how best to convey sign messages, the cardinal rule is to "keep them simple" for rapid comprehension by the public. Pictures, symbols, and logos can add individuality and character to signs, in addition to making them easier to read.

(e) Size

As mentioned earlier, legibility depends more upon the color and type of lettering than it does on the actual size of the sign. In fact, a very large sign may be almost unreadable for pedestrians in a downtown business district, while a small window sign (especially one located just above the windowsill) will quickly catch one's eye. Therefore, the size of the words, and ultimately the size of the sign, should always be kept in scale with the viewer's location and speed. The sign should also be in scale with the building, never covering architectural details (such as arches, transom windows, mouldings, columns, capitals, sills, cornices, etc.).

Sign materials should be durable and weatherproof. Spending a little extra on quality saves money over the long term by reducing replacements costs. For example, if plywood is used, "medium density

overlay" (MDO) board has exceptionally smooth and weather-resistant surfaces and offers a considerably longer life span (and more professional appearance) than regular exterior grade plywood.

2. Guidelines for Special Districts

In order to choose which sign types best suit the community's and the advertiser's purposes, the physical and cultural context in which the signs are to be displayed must be carefully defined. To simplify this process, three distinctly different settings, or districts, are presented here with recommendations for the best types and designs of signs in terms of materials, dimensions, color, lettering, placement, and illumination.

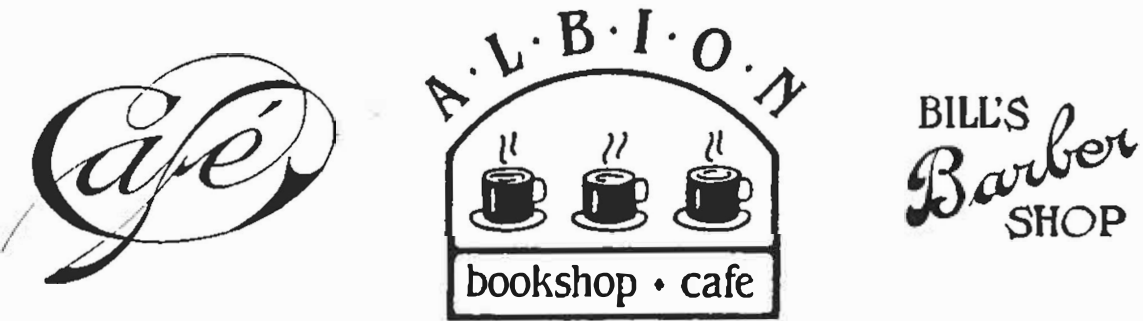
2.1 Historic Town or Village Center District

The typical historic town or village center in the Connecticut River Valley is characterized by a mix of traditionally styled civic, commercial and residential buildings lining the streets or grouped around a town common or green. As town centers vary immensely in their individual character, the types and designs of signs installed there should correspond with the particular image a town wishes to present (or reinforce).

General guidelines for town centers can be outlined, however. Signs in these districts relate to pedestrians and to people in slow-moving vehicles. They should be designed to be readable by these people, thereby encouraging shoppers and passersby to stop and linger. Large, auto-oriented signs are a modern addition in these areas and are inconsistent with both the scale of town centers and their pedestrian character.

(a) Materials

When selecting materials for constructing a sign within the town center, it is important to consider how the sign will fit into the surrounding townscape. In downtown areas, sign materials should be consistent with, or at least complement, the original construction materials and architectural style of the building facade on which they are to be displayed. For this reason, natural materials such as wood and metal are much more appropriate than plastic. Internally-lit plastic signs are out of context with the period and style of historic buildings and are often the most offensive type of signage in historic districts.



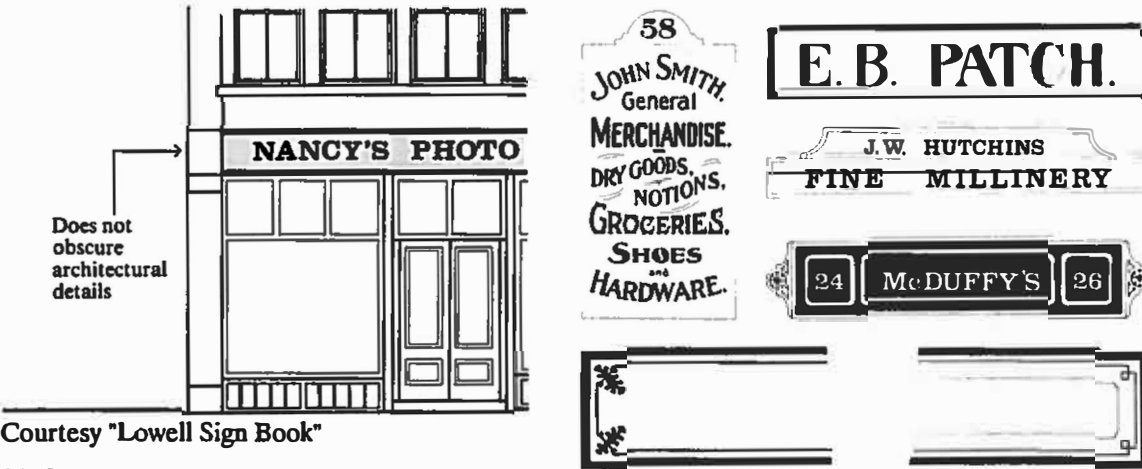
Courtesy "Lowell Sign Book"

Signs painted directly onto a building or window surface can often be quite effective. Appropriately designed neon window signs (with custom shapes and colors complementary to the building) are another option, and can add to the character of an establishment, if sensitively handled.

(b) Size

Appropriate dimensions are relative to the sign type and its location and placement. Smaller, simply designed signs are the easiest to read, and therefore the most effective. The signs must also not obscure important architectural details or features, as noted above.

Signs identifying commercial establishments should generally be placed within a long, continuous information band immediately above the storefront or should be applied directly onto the display window. The information band should generally be between 18" and 26" in its vertical dimension and must never be allowed to cover transom windows (just above the display windows) or the second floor windows. Signs on adjacent storefronts should be co-ordinated in height and proportion and, wherever possible, should use the same sign format (or they should at least both employ identical backgrounds).



Courtesy "Lowell Sign Book"

(c) Lettering

Lettering styles should complement the style and period of the building on which they appear. Traditional block and curvilinear styles which are easy to read are preferred. No more than two different type styles should be used on the same sign, to avoid a cluttered appearance.

(d) Illumination

The type of lighting which is most appropriate to the historic character of town and village centers is direct illumination from a shielded light source. Internal illumination is generally out of character for the historic character of this district. Exceptions can, however, be made for contemporary "infill" buildings, where internally-lit signs with opaque backgrounds and glowing translucent letters may be permitted. Also, individual solid metal letters with internal lighting tubes that back-light the wall in a "halo" effect may also be allowed.

Neon window signs may be permitted in cases where they are custom designed to be compatible with the building's historic and/or architectural character. Neon signs should meet the same dimensional requirements as other signs in the district.

2.2 Commercial Roadside Districts

Commercial roadside districts are areas where extensive commercial development has occurred along the main routes leading to and from town or village centers. The goal in these areas is to provide legible signage for commercial facilities while deterring the clutter and confusion associated with "strip" development. Signage in commercial roadside districts should be compatible with that of the adjacent



Examples of a free-standing sign (left) and a custom-designed neon window sign. Blue and white neon colors complement the building's historic paint scheme.

town center, although, since it is oriented toward automobile rather than pedestrian traffic, some differences are acceptable.

(a) Materials

As in the Historic Town and Village Center district, sign materials should complement building materials. However, because most of the buildings in this area tend to be of modern construction, the limited use of plastic materials in signage may sometimes be appropriate.

(b) Size

Commercial Roadside districts are oriented to the automobile and are often located along high-speed roads. Therefore, the size of signs must usually be increased, especially in the case of free-standing signs. Larger free-standing signs, however, must be kept lower to the ground to balance their size.

(c) Lettering

Again, since most of the buildings are of modern construction, lettering styles may be more varied than in town and village centers. However, the readability of signs in this district is improved by a minimum of words, and a clean, simple type style. Generally, lettering size need not exceed 8" in height, with 12" letters for the overall name of multi-unit plazas. (Lettering one foot tall is normally readable at a distance of 500 feet.)

(d) Illumination

The preferred type of illumination in this district is a shielded light or lights directed onto the sign. However, internally illuminated signs may be appropriate when they are composed of:

- * individual back-lit letters which are silhouetted against a softly-illuminated wall;
- * individual letters with translucent faces, containing soft lighting elements inside each letter; or
- * metal-faced box signs with cut-out letters and soft-glow fluorescent tubes (in which the sign background is opaque).

2.3 Scenic Roadside Districts

These districts are characterized by rural landscapes, often with highly scenic views. The most important goal in this area is to maintain residential character and rural beauty, while allowing for the sensitive integration of compatibly-designed commercial development. With the significant historic architecture often found in these areas, special care must be taken in sign design and regulation to ensure that signage be as elegantly simple and clear as possible.

(a) Materials

The same materials requirements apply as in the Town and Village Center districts.

(b) Size

Residences and the surrounding landscape are much more heavily impacted by signage than are commercial districts. To be compatible with this landscape, signs must be kept small and relatively unobtrusive. Free-standing signs are the most useful in this district, since most existing structures are set back at a greater distance from the road.



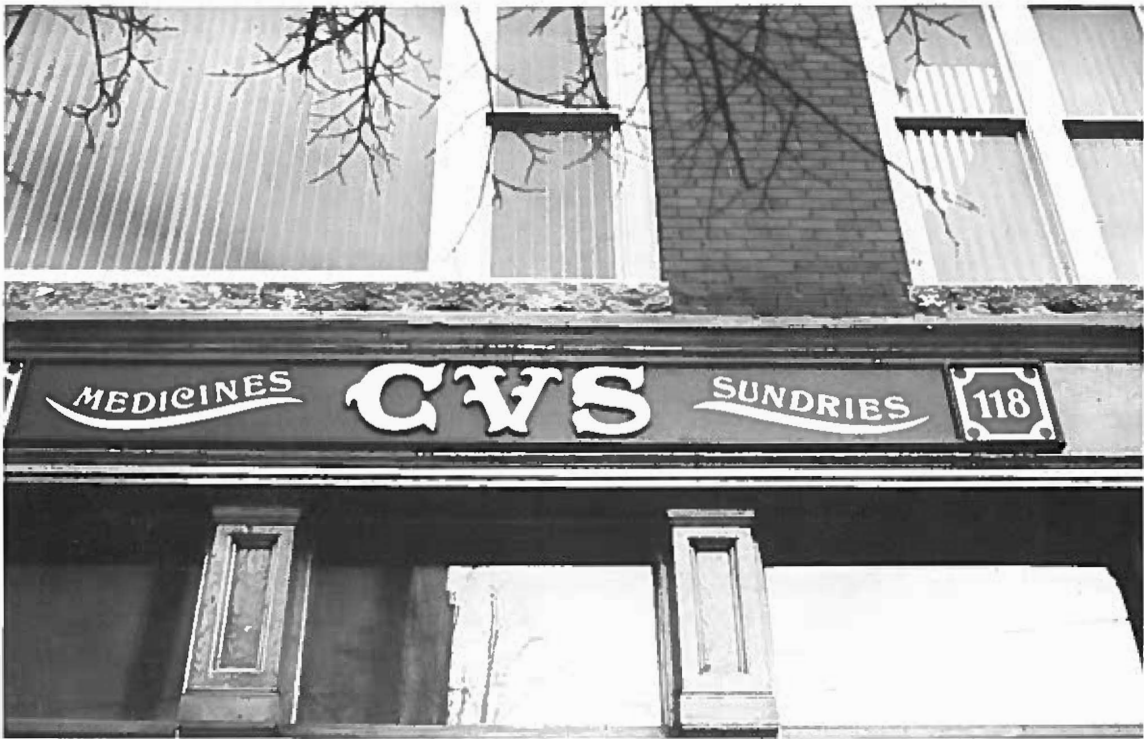
Free-standing sign (with changeable message) suitable for commercial roadside. Constructed with 6" x 6" posts and beams (pressure-treated), and exterior grade plywood mounted with indoor-outdoor carpeting. Lightweight plastic letters are held in place by postage stamp-sized "Velcro" tabs.

(c) Lettering and Message

Type styles should be kept simple and clear, with wording on signs kept to a minimum.

(d) Illumination

The only type of illumination allowed in this district is direct, shielded lighting.



Chain store sign custom-designed to harmonize with a 19th-century building in a historic district.

Comprehensive Model Signage Bylaw

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Appendix: Sample Sign Application Package

1. Purpose

- 1.1 To promote the safety, comfort, and well-being of the users of streets, roads, and highways in the Town;
- 1.2 To reduce distractions and obstructions from signs which would adversely affect traffic safety, and to alleviate hazards caused by signs projecting over or encroaching upon public ways;
- 1.3 To discourage excessive visual competition in signage and ensure that signs aid orientation and adequately identify uses and activities to the public; and,
- 1.4 To preserve or enhance town character by requiring new and replacement signage which is:

* creative and distinctive;

* compatible with the surroundings;

* appropriate to the type of activity to which it pertains;

* expressive of the identity of individual proprietors or of the community as a whole; and

* appropriately sized in its context, so as to be easily readable.

1.5 This bylaw is adopted pursuant to Article 89 of the Constitution of the Commonwealth of Massachusetts, and Chapter 40, Section 1 (1) of the Massachusetts General Laws.

2. Definitions

Sign: Any display of lettering, logos, colors, lights, or illuminated neon tubes visible to the public from outside of a building or from a travelled way, which either conveys a message to the public, or intends to advertise, direct, invite, announce, or draw attention to, directly or indirectly, a use conducted, goods, products, services or facilities available, either on the lot or on any other premises, excluding window displays and merchandise.

Billboard: A free-standing sign larger than thirty-five (35) sq. ft. in gross area, or a wall sign covering more than ten percent (10%) of the area to which it is affixed.

Facade: The exterior surface of a building.

Flashing Sign: A sign whose illumination is not kept constant in intensity at all times when in use, and which exhibits changes in light, color, direction, or animation. Illuminated signs which indicate the date, time, and temperature will not be considered flashing signs.

Free-Standing Sign: A self-supporting sign not attached to any building, wall, or fence, but in a fixed location. This does not include portable or trailer type signs.

Home Occupation: An activity customarily carried on by the occupants of a dwelling unit, inside the dwelling unit, requiring only hobby type equipment, and not involving:

- 1. the sale of articles produced elsewhere than on the premises;
- 2. the storage of materials or products outside of a principal building;
- 3. the making of external structural alterations which are not customarily in residential buildings;
- 4. the production of offensive noise, vibration, smoke, dust, or other particulate matter; heat; humidity; glare; odors, aromas, or scents; or other objectionable effects.

Home occupations include but are not limited to: fine art studios, dressmaking, and teaching of not more than four pupils simultaneously, or in case of musical instruction, of not more than a single pupil at a time.

Home occupations do not include such uses as: barber shops, beauty parlors, funeral parlors, commercial stables or kennels, real estate or insurance offices, auto body or repair shops, and recognized professions (except that real estate, insurance, and professional offices may be allowed as Special Permit Uses in the Rural District).

Illuminated Sign: Any sign lit by electrical bulbs, fluorescent lights, or neon tubes. Neon tubes used as abstract, graphic, decorative, or architectural elements shall be considered to constitute an illuminated sign.

Landmark Sign: An older sign of artistic or historic merit, uniqueness, or extraordinary significance to the town as identified by the local Historical Commission, or the Board of Selectmen in their absence.

Lintel: The horizontal support member across the head of a door or window.

Moveable Sign: A sign capable of being readily moved or relocated, including portable signs mounted on a chassis and wheels, or supported by legs.

Off-Premises Signs: Any sign which is not on the premises of the business, including a billboard.

On-Premises Signs: Any sign that advertises, calls attention to or identifies the occupant of the premises on which the sign is maintained, or the business transacted thereon, or advertises the property itself or any part thereof as for sale or rent.

Projecting Sign: A sign which is affixed to a building, tree, or other structure and which extends more than six (6) inches beyond the surface to which it is affixed.

Roof Sign: A sign which is located above, or projects above, the lowest point of the eaves or the top of the parapet wall of any building, or which is painted on or fastened to a roof.

Temporary Sign: A sign intended to be used for a period of no more than thirty (30) days. Exceptions for pennants and similar devices intended for civic purposes may be granted by special permit.

Wall Sign: Any sign which is painted on, incorporated into, or affixed parallel to the wall of a building, and which extends not more than six (6) inches from the surface of that building.

3. General

3.1 Permitted Signs

Only signs which refer to a permitted use or an approved conditional use as set forth in Section () of the Zoning Bylaw are permitted, provided such signs conform to the provisions of this Section.

3.2 Prohibited Signs

(a) Billboards, streamers, pennants, ribbons, spinners or other similar devices shall not be constructed, posted or erected in any zone. Exceptions include flags and buntings exhibited to commemorate national patriotic holidays, and temporary banner announcing charitable or civic events.

(b) Flashing signs, roof signs, signs containing moving parts, and signs containing reflective elements which sparkle or twinkle in the sunlight are not permitted. Signs indicating the current time and/or temperature are permitted provided they meet all other provisions of this bylaw.

(c) Any sign advertising or identifying a business or organization which is either defunct or no longer located on the premises is not permitted. Exceptions are granted to Landmark Signs which may be preserved and maintained even if they no longer pertain to the present use of the premises.

(d) No sign shall be larger than sixty-four (64) sq. ft.

(e) No sign, except for a traffic, regulatory, or informational sign, shall use the words "stop," "caution," or "danger," or shall incorporate red, amber, or green lights resembling traffic signals, or shall resemble "stop" or "yield" signs in shape and color.

3.3 Illumination Standards

(a) No person may erect a sign which flashes, rotates, or has motorized moving parts.

(b) No person may erect a sign with exposed electrical wires.

(c) Strings of bulbs are not permitted, except as part of a holiday celebration. In addition, strings of bulbs may be permitted to decorate trees at the discretion of the Planning Board, provided that such display does not interfere with neighboring land uses.

(d) No sign shall be illuminated between the hours of 11 p.m. and 6 a.m. unless the premises on which it is located is open for business.

(e) No person may erect a sign that constitutes a hazard to pedestrian or vehicular traffic because of intensity or direction of illumination.

3.4 Placement Standards

- (a) No person may erect a sign which is affixed to a fence, utility pole, or structure, or tree, shrub, rock, or other natural object.
- (b) Signs shall not be mounted on roofs or extend above the roof line (unless mounted on a parapet wall which extends above the roof line, in which case the sign may not extend above the top of said parapet).
- (c) No projecting sign shall extend into a vehicular public way, or be less than ten (10) feet above a pedestrian way.
- (d) No sign together with any supporting framework shall extend to a height above the maximum building height allowed in a district.
- (e) Signs shall not cover architectural details such as, but not limited to arches, sills, mouldings, cornices, and transom windows.

3.5 Safety Standards

No person may erect a sign which:

- (a) is structurally unsafe;
- (b) constitutes a hazard to public safety and health by reason of inadequate maintenance, dilapidation or abandonment;
- (c) obstructs free entrance or exit from a required door, window, or fire escape;
- (d) obstructs light or air or interferes with proper functioning of the building; or
- (e) is capable of causing electrical shock.

3.6 Exceptions

For the purposes of this Section, the term "sign" shall not include:

- (a) signs erected or posted and maintained for public safety and welfare or pursuant to any governmental function, law, bylaw, or other regulation;
- (b) a bulletin board or similar sign not exceeding twenty (20) sq. ft. in display area, in connection with any church, museum, library, school, or similar public or semi-public structure, provided that the top of such sign shall not be more than eight (8) feet above ground level, and provided that it does not possess any of the characteristics listed in Section 2.2 above;
- (c) directional signs solely indicating ingress and egress placed at driveway locations, containing no advertising material, and where display area does not exceed three (3) sq. ft. or extend higher than four (4) feet above ground level. Such sign will conform in all respects with the requirements of this code; and
- (d) Signs relating to trespassing and hunting, not exceeding two (2) sq. ft. in area.

3.7 Non-Conforming Signs

3.7.1 Continuance: A non-conforming sign lawfully existing at the time of adoption or subsequent amendment of this bylaw may continue, although such sign does not conform to the provisions of this bylaw.

3.7.2 Maintenance: Any lawfully existing sign cannot be enlarged, reworded (other than in the case of cinema or theatre signs, or signs with automatically changing messages), redesigned or altered in any way including repainting in a different color, except to conform to the requirements of this bylaw; and provided further that any such sign which has deteriorated to such an extent that the cost of restoration would exceed 35% of the replacement cost, shall not be repaired or rebuilt or altered except to conform to the requirements of this bylaw.

3.7.3 Replacement: Any sign replacing a non-conforming sign shall conform with the provisions of this Section, and the non-conforming sign shall no longer be displayed.

4. Administration

4.1 Permits

4.1.1 No sign shall be erected, displayed, altered, or enlarged until an application has been filed, and until a permit for such action has been issued. Applications shall be on forms prescribed by the Sign Officer. At a minimum, all applications shall include a scale drawing specifying dimensions, materials, illumination, letter sizes, colors, support systems, and location on land or buildings, with all relevant measurements.

4.1.2 Permits shall be issued only if the Sign Officer determines the sign complies or will comply with all applicable provisions of this bylaw and the state Building Code, Article 14. Such application may be filed by the owner of the land or building, or any person who has the authority to erect a sign on the premises.

4.1.3 The Sign Officer shall act within 30 days of receipt of such application together with the required fee. The Sign Officer's action or failure to act may be appealed to the Board of Appeals under the provision of Chapter 40A.

4.1.4 A Special Permit application for lighted signs, signs which are larger than those allowed by right, or signs in _____ districts shall be referred to the Planning Board, which shall make recommendations to the Sign Officer. The board may hold a public hearing if it deems necessary. If the board holds a public hearing, the Sign Officer's decision may be delayed until 45 days after the application.

4.2 Fees

A schedule of fees for such permits may be established and amended from time to time by the Board of Selectmen.

4.3 Enforcement

The (Building Inspector, Selectmen, Planning Board) is hereby designated as the Sign Officer, and is hereby authorized to enforce this bylaw. The Sign Officer is authorized to order the repair or removal of any sign and its supporting structure which is judged dangerous, or in disrepair, or which is erected or maintained contrary to this bylaw. Whenever a Sign Officer is designated, that person or board should notify the State Outdoor Advertising Board.

4.4 Removal of Signs

Any sign which has been ordered removed by the Sign Officer, or is abandoned or discontinued, shall

be removed by the person, firm, or corporation responsible for the sign within thirty (30) days of written notice to remove.

4.5 Penalties

Violation of any provision of this bylaw or any lawful order of the Sign Officer shall be subject to a fine of not more than \$100.00 per offense. Each day that such violation continues shall constitute a separate offense.

4.6 Measurement of Sign Area

- (a) Sign measurement shall be based upon the entire area of the sign, with a single continuous perimeter enclosing the extreme limits of the actual sign surface.
- (b) For a sign painted on or applied to a building, the area shall be considered to include all lettering, wording and accompanying designs or symbols, together with any background of a different color than the natural color, or finish material of the building.
- (c) For a sign consisting of individual letters or symbols attached to or painted on a surface, building, wall, or window, the area shall be considered to be that of the smallest rectangle or other shape which encompasses all of the letters and symbols.
- (d) The area of supporting framework (for example brackets, posts, etc.) shall not be included in the area if such framework is incidental to the display.
- (e) When a sign has two (2) or more faces, the area of all faces shall be included in determining the area, except where two faces are placed back to back and are at no point more than two (2) feet from each other. In this case, the sign area shall be taken as the area of either face, and if the faces are unequal, the larger shall determine the area.

4.7 Measurement of Height

The height of any sign shall be measured from the surface of the road up to the highest point of the sign. In situations where a sign is intended to be visible from two roads of different elevations, measurement shall be from the surface of the lower roadway.

4.8 Variances for Signs

Variances shall not be granted for any sign, as ample provision has been made for premises identification within this bylaw, and because true hardship as defined in state law cannot be demonstrated in signage situations.

5. General Standards for Specific Types of Signs

5.1 Address

- One sign displaying the street number or name of the occupant of the premises, or both.
- (a) Such sign may include identification of an on-premise professional office or customary home occupation.

- (b) Such sign may be attached to the building or may be on a post not more than four (4) feet high, and setback at least three (3) feet from the public right-of-way.
- (c) Such sign may not exceed two (2) sq. ft. in area.

5.2 Awning

- A sign painted on or attached to the cover of a movable metallic frame, of the hinged, roll, or folding type of awning.
- (a) Such sign must be painted on or attached flat against the surface of the awning, but not extend beyond the valance or be attached to the underside.
 - (b) Letters shall not exceed ten (10) inches in height.
 - (c) A minimum of eight (8) feet above sidewalk level must be allowed for pedestrian clearance.

5.3 Construction

- An on-premise sign identifying the contractor, architect, landscape architect, and/or engineer's name, address, and other pertinent information.
- (a) Such signs shall not exceed twelve (12) sq. ft. in area, and shall be set back at least ten (10) feet from the street lot line, or one-half the building set-back distance, whichever is less.
 - (b) Such a sign may be maintained on the building or property for the interim of construction, and not more than thirty (30) days following the completion of said construction.

5.4 For Sale/Rent/Lease

- An on-premise sign advertising the property being sold or rented.
- (a) Such signs shall not exceed six (6) sq. ft.
 - (b) Such signs shall advertise only the property on which the sign is located.
 - (c) A maximum of two such signs may be maintained on any property being sold or rented, and they shall be removed by the owner or agent within thirty (30) days of sale, rent, or lease.

5.5 Free-Standing

A self-supporting sign not attached to any building, wall, or fence, but in a fixed location. This does not include portable or trailer type signs. Dimensional standards for free-standing signs in different districts are specified in Table 5.5.1 below, which relates requirements to the character of each area and the speed at which traffic usually travels within them.

TABLE 5.5.1

	Highway Commercial	Roadside Commercial	Village and Town Center	Residential	Scenic Roadside
Typical Speed Limit (mph)	45-55	35-45	25-35	25	35-55
Free-Standing Pole Signs					
Height (max. ft.)	16	12	10	8	10
Area (max. sq. ft.)	16	12	10	2	4
Ground Clearance (min. ft.)	8	7	7	4	7
Other Free-Standing Signs					
Height (max. ft.)	4	4	4	4	4
Area (max. sq. ft.)	24	20	16	4	6
Ground Clearance (min. ft.)	0	0	0	0	0

- (a) Free-standing signs over six (6) feet in height may have no more than two (2) sides; those less than six (6) feet in height may have three (3) or four (4) sides.
- (b) A lot with frontage of three hundred (300) feet or more may have two (2) free-standing signs, not less than one hundred seventy five (175) feet apart.

5.6 Illuminated Signs

- (a) Signs shall be illuminated only with steady, stationary, shielded light sources directed solely onto the sign without causing glare.
- (b) Internal illumination is generally discouraged, but it may be appropriate in certain circumstances, such as:
- * individual back-lit letters which are silhouetted against softly illuminated wall;
 - * individual letters with translucent faces, containing soft lighting elements inside each letter; and
 - * metal-faced box signs with cut-out letters and soft-glow fluorescent tubes.

However, such signs are generally suitable only on contemporary buildings. The display of internally-illuminated plastic signs with dark-colored moveable letters shall be strictly prohibited in all districts. Moveable rented signs of this nature, existing on the effective date of this bylaw, shall be permanently removed within twelve (12) months of the date of this bylaw. Such signs which are owned by the businesses which are being identified or advertised on them shall be amortized in accordance with the provisions of Section 3.9 of this bylaw.

- (c) Neon window signs may be permitted in cases where they are custom designed to be compatible with the building's historic and/or architectural character, and where their color has been selected to harmonize with the building's exterior colors.
- (d) Gas-filled light tubes shall be allowed for indirect illumination and when placed in such a manner that the tubes are not exposed to view from any point along the public roadway or sidewalk.
- (e) Signs shall not be illuminated directly or indirectly between the hours of 11 p.m. and 7 a.m. unless the premises are open during such hours.
- (f) Illuminated signs shall not be permitted to shine onto residential properties and travelled ways.

5.7 Individual Letters or Symbols

These may be attached to an awning, marquee, building surface, wall, or signboard.

- (a) Letters or symbols shall not project more than twelve (12) inches from the building surface.
- (b) Such letters and symbols shall not obscure the architectural features of the building to which they are attached.
- (c) Such letters and symbols shall not extend above the lowest part of the roof, nor beyond the ends of the wall to which they are attached.
- (d) Letters or symbols shall have an aggregate area not exceeding 1.5 sq. ft. for each foot of building face parallel to a street lot line, or ten percent (10%) of the wall area to which they are affixed, whichever is less. When a lot fronts on more than one street, the aggregate sign area facing each street frontage shall be calculated separately.
- (e) See also Section 5.14 "Wall Signs."

5.8 Landmark Signs

An older sign of artistic or historic merit, uniqueness or extraordinary significance to the town. The character of such signs warrants their preservation in original condition, or their restoration.

5.9 Marquee Signs

A sign painted on, attached to, or consisting of an interchangeable copy reader, on a permanent overhanging shelter which projects from the face of a building.

- (a) Such signs may be painted on or attached flat against the surface of, but not extending beyond or attached to the underside of the overhang.
- (b) Letters or symbols shall not exceed twelve (12) inches in height.
- (c) A minimum clearance of ten (10) feet above the sidewalk level must be allowed for pedestrian clearance.

5.10 Moveable Signs

Moveable signs are not permitted in any district except Town or Village Center districts. In these areas, moveable signs made only of wood, and standing on legs not over four (4) feet in total height, may be allowed by special permit. Town and Village Center districts have a pedestrian orientation and therefore the smaller, personal scale of the free-standing, moveable sign may be appropriate.

5.11 Multiple Signs

A group of signs clustered together in a single structure or compositional unit. Multiple signs are used to advertise several occupants of the same building or building complex.

- (a) The display board shall be of an integrated and uniform design.

(b) The maximum sign area permitted is sixteen (16) sq. ft. for the sign bearing the name of the building or office park, and two (2) sq. ft. for the name of each business or office located there.

(c) Complexes with over 300 feet of frontage will be allowed two (2) free-standing signs.

5.12 Off-Premise Signs

(a) Informational and directional signs containing no advertising are permitted to direct traffic flow, indicate parking space, identify points of interest, locate businesses, or provide other essential information to guide vehicular or pedestrian traffic flow.

(b) Off-premise signs shall not be larger than one (1) sq. ft. in size, and shall be uniform on color, having a dark background with light colors, or a light background with dark colors. Neon or "day-glow" colors should be avoided.

(c) There shall not be more than two (2) off-premise signs per establishment.

(d) Off-premise directory boards containing small identification signs conforming to the above requirements may be permitted in special situations where visibility is a significant problem and where they can be harmoniously integrated with the environment.

5.13 Painted Wall Signs

A permanent mural or message painted directly onto a building surface. A special permit is required for all new signs of this type, and will comply with the dimensional requirements of a wall sign. Exceptions are granted to landmark signs which may be preserved and maintained, even if they no longer pertain to the present use of the premises.

5.14 Political Signs

A sign designed to influence the action of voters for the passage or defeat of a measure, or the election of a candidate to a public office at a national, state, or other local election.

(a) Such signs are permitted if they are stationary, unlighted, and temporary.

(b) Such signs shall be displayed no earlier than twenty (20) days prior to a voting day, and shall be removed within five (5) days after a voting day.

(c) Such signs may not exceed four (4) sq. ft. in area.

(d) A maximum of two (2) signs per lot is allowed.

5.15 Projecting Signs

A wall-mounted sign perpendicular to the building surface.

(a) If flat, each face shall not exceed ten (10) sq. ft.

(b) The total area of a three dimensional sign shall be determined by enclosing the largest cross-section

of the sign in an easily recognizable geometric shape and computing its area which shall not exceed nine (9) sq. ft.

(c) Such sign shall be hung at right angles to the building and shall not project closer than two (2) feet to the curb line.

(d) The supporting framework shall be in proportion to the size of such sign.

(e) Signs which overhang a public way (including sidewalks) shall be covered by a public liability insurance policy which names the Town as the insured party.

(f) The top of the sign may be suspended in line with one of the following, whichever is the most successful application of scale, linear continuity, and visibility as determined by the sign officer:

- (i) suspended between the bottom sills of the second story windows and the top of the doors and windows of the ground floor; or,
- (ii) the lowest point of the roof of a one story building.

(g) Projecting signs shall have a minimum clearance of eight (8) feet above grade when located adjacent to or projecting over a pedestrian way. If projecting over an alley or driveway, the clearance must be at least thirteen (13) feet.

5.16 Public Service Signs

A sign located for the purpose of providing directions towards or indication of use not readily visible from the street (e.g. restrooms, telephone, etc.)

(a) Such signs necessary for public safety and convenience shall not exceed two (2) sq. ft.

(b) Such signs shall bear no advertising.

(c) Such signs are not included in computing total sign area allowed.

5.17 Wall Signs

A sign which is attached parallel to the exterior surface of a building or structure.

(a) Such sign shall not project more than fifteen (15) inches from the building surface.

(b) Such sign shall not obscure architectural features of the building, not limited to features such as arches, sills, mouldings, cornices, and transoms.

(c) Such sign shall not extend above the lowest point of the roof, nor beyond the ends of the wall to which it is attached.

(d) Such signs shall have an aggregate area not exceeding 1.5 sq. ft. for each lineal foot of building face parallel to a street lot line, or ten percent (10%) of the wall area to which it is attached, whichever is less. Where a lot fronts on more than one street, the aggregate sign area facing each street frontage shall be calculated separately.

(e) Where two (2) or more wall signs are affixed to one wall, the gross display area shall be the sum total area of all signs.

- (f) Wall signs shall not extend higher than the eave line or top of the parapet wall of the principal building.
- (g) No part of a wall sign, including the display surface, shall extend more than six (6) inches from the building surface.
- (h) The size of signs attached to buildings may be increased in area (over allowable size) by 25% for every 100 feet of building setback. This shall apply to buildings setback more than 100 feet from the road right-of-way, and the increase may be pro-rated according to the actual setback distance.

5.18 Window Signs

Any sign which is painted or mounted onto a window pane, or which is hung directly inside the window with the purpose or effect of identifying any premises from the sidewalk or street. Window signs shall not exceed more than thirty percent (30%) of the window area in which they are displayed.

Non-temporary signs hung inside windows shall be made of clear materials such as plexi-glass with lettering painted on them.

6. Districts and Special Regulations

6.1 Types of Districts

- (a) **Town or Village Center:** The town center is generally characterized by traditional architecture lining the street, civic buildings often with a town common or green, and generally containing a mix of residential and commercial building uses.
- (b) **Commercial Roadside:** Concentrated commercial development along roads leading to and from the town and village center.
- (c) **Scenic Roadside:** A combination of limited commercial development, scattered residential areas, and-agricultural land characterized largely by open space, fields, and long scenic views.
- (d) **General Highway:** Open highways not near commercial districts.

6.2 District Requirements

6.2.1 Town or Village Center:

Within this district the intent of sign regulation is to ensure visual compatibility with the scale and character of the surrounding architecture. The signage must also be readable by pedestrians and people in slow-moving vehicles.

(a) **Number:** There shall be no more than three (3) types of signs employed per building, regardless of number of occupancies. (e.g. free-standing, awning, window; or wall, window and awning).

Each ground floor occupant of a building may display two (2) signs.

Each occupant in an upper level of a building may display one sign.

(b) **Materials:** All signs shall be made of wood or metal. If plywood is to be used, it must have

exceptionally smooth and weather resistant surfaces, such as those obtained with medium-density overlay ("MDO") board.

(c) **Location:**

- * Signs should be concentrated near the pedestrian level.
- * The upper facades of buildings should not be cluttered with signs.
- * Signs shall not obscure important architectural details or features such as windows, transom panels, sills, mouldings, and cornices.
- * Wall signs identifying commercial establishments shall generally be placed within an information band immediately above the storefront. The information band should be confined to the vertical distance separating windows on the ground and the second floors, or should be no more than two (2) feet in height, whichever is lesser.
- * Signs on adjacent storefronts within the same building shall be coordinated in height and proportion, and should be encouraged to use the same signing format.

(d) **Colors:** Colors should be chosen to complement, not clash with the facade color of the building. Signs should normally not contain more than three colors, except in instances of an illustration. Dark backgrounds with light-colored lettering shall generally be required, as this is traditional. Examples of preferred background colors are burgundy red, forest green, chocolate brown, black, charcoal, and navy blue. Preferred lettering colors are ivory, white, or gold. "Day-glow" colors are prohibited.

(e) **Size:** The size of signs should be restricted to ensure that signs do not overpower the facades to which they are affixed. Not more than one and a half sq. ft. (1.5 sq. ft.) of total signage area will be permitted per linear foot of storefront.

(f) **Preferred Sign Types:**

* Free-standing only as a multiple sign or with large building setback	
* Wall	* Moveable
* Window	* Neon
* Projecting	* Landmark
* Awning	* Marquee

6.2.2 Commercial Roadside

The goal in this district is to provide legible signage for auto-oriented commercial facilities, while moderating visual competition.

(a) **Number:** There shall be no more than three (3) types of signs employed per building (e.g. free-standing, wall, window).

There shall be no more than three (3) separate signs on a structure unless the structure is designed for and has more than three (3) occupancies, in which case there can be one sign per occupancy plus two additional signs.

(b) **Materials:** The use of wood and metal signs is strongly encouraged.

(c) **Location:** Signs should be located where they can be most easily read, thus reducing the size needed for legibility.

(d) **Colors:** The number of colors should be limited to three (3). Since these signs must be legible from a distance, the degree of contrast between the background and letter color is important. Dark

backgrounds with light-colored lettering is strongly encouraged. "Day-glow" colors are prohibited.

(e) **Size:** Due to the traffic speed, and the larger setbacks common in this type of district, slightly larger signs than in Town and Village Centers are permissible. See dimensional standards for individual sign types in Section 5.

(f) **Preferred Sign Types:**

- * Wall
- * Free-standing

6.2.3 Scenic Roadside

The most important goal in this area is to maintain the residential character and scenic open space. The significant historic architecture often found within these districts, and the surrounding rural landscape form the essence of the existing visual quality of the scenic roadside. Special care should be taken with this quality in the style, location, design, and use of materials for signs.

(a) **Number:** Each business may display not more than two (2) signs. Each structure or complex may only display one (1) free-standing sign.

(b) **Materials:** Signs in this district shall be of wood or metal. Interior lit signs are strictly prohibited.

(c) **Location:** As in Commercial Roadside Districts, signs should be placed in clear view of traffic to minimize their required size.

(d) **Colors:** The number of colors used in a sign should be limited to three (3) unless used in an illustration. To ensure the legibility of the sign, a high degree of contrast between the background and letters is preferable. "Day-glow" colors are prohibited. The use of dark backgrounds with light-colored lettering shall generally be required. (See Section 6.2.1.d. above.)

(e) **Size:** Signs in this district shall generally be smaller than in Commercial Roadside Districts (see Table 5.5).

(f) **Preferred Sign Types:**

- * Free-standing
- * Wall
- * Awning

7. Maintenance

A sign shall be maintained in a secure and safe condition. If the Sign Officer is of the opinion that a sign is not secure, safe, or in a good state of repair, written notice of this fact shall be given to the person responsible for the maintenance of the sign. If the defect in the sign is not corrected within the time permitted by the Sign Officer, the Sign Officer may revoke the sign permit and take possession of the permit until the owner pays the cost of removal, thus placing the sign owner in violation of the sign bylaw and liable for a fine as specified in Section 4.5.

3.7 Non-Conforming Signs and Sign Structures(Alternative Version)

Non-conforming signs and sign structures may remain except as qualified below:

(a) Other than sign maintenance, no non-conforming sign shall be reconstructed, remodeled, relocated, or changed in size or content to show a new trade name, different words, letters or numbers, new design, different colors or different logo, unless such action will make the sign conforming in all respects.

(b) Nothing in this Section shall be deemed to prevent keeping in good repair a non-conforming sign, including sign maintenance, repainting, and replacement of broken or deteriorated parts of the sign itself. Supporting structures for non-conforming signs shall not be replaced, unless such replacement will make the sign and sign structure conforming in all respects.

(c) A non-conforming sign or sign structure which is destroyed or damaged by any casualty may be restored within six (6) months after such destruction or damage only after the owner has shown that the damage did not exceed fifty percent (50%) of the appraised value of the sign. If such sign or sign structure is destroyed or damaged to an extent exceeding fifty percent (50%), it shall be removed and shall not be reconstructed or replaced unless such action makes the sign and sign structure conforming in all respects.

(d) A non-conforming sign or sign structure shall be removed within thirty (30) days if the building containing the use to which the sign is accessory is demolished or destroyed to an extent exceeding fifty percent (50%) of the building's appraised value.

(e) Each non-conforming sign and sign structure shall be allowed to be displayed for a period of time that provides a reasonable opportunity for the owner to benefit from the investment made in the sign. This period shall be seven (7) years. After this time period has expired, non-conforming signs and sign structures shall be removed or otherwise brought into compliance with this bylaw. The table below establishes a fair and equitable time schedule for such compliance:

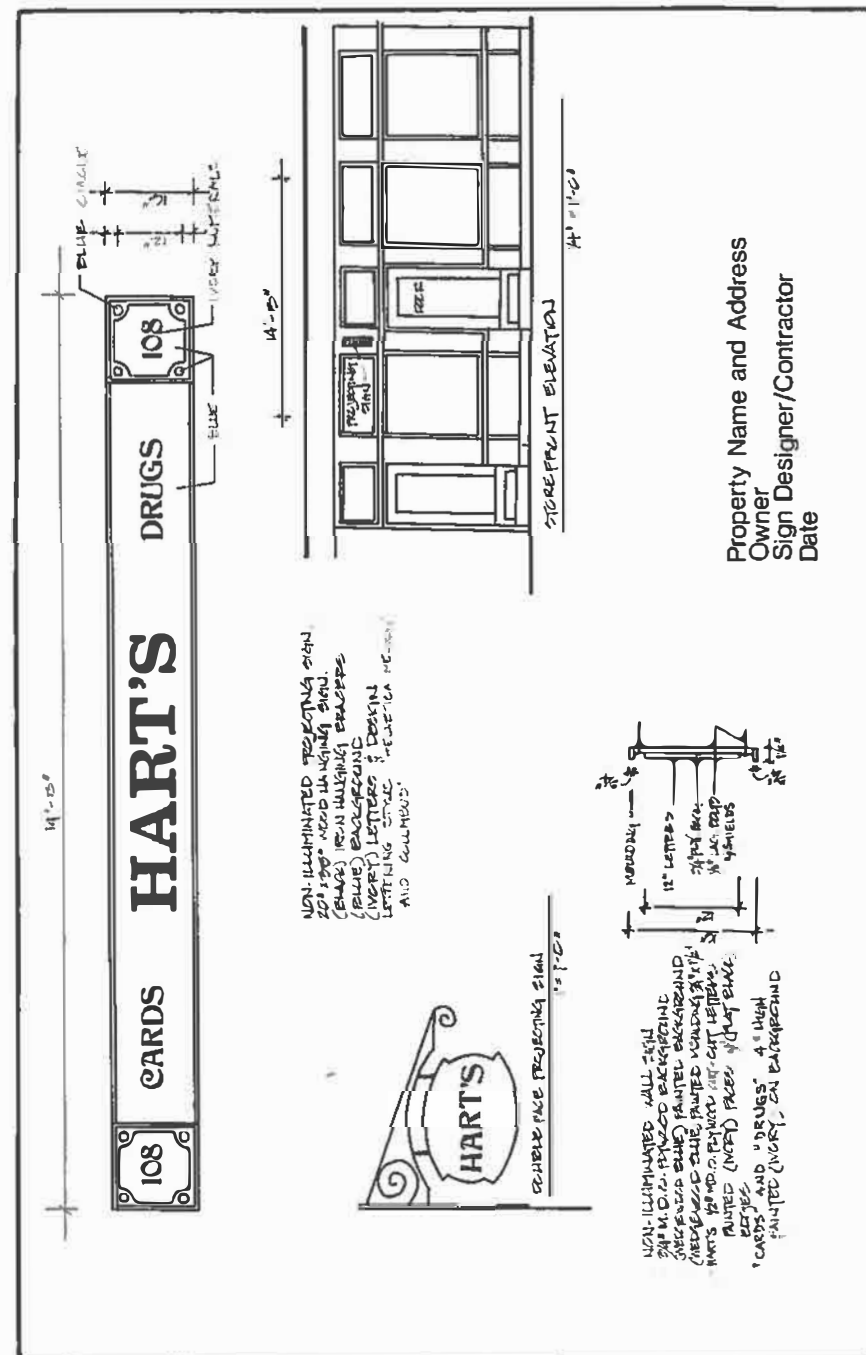
<u>Date of Installation</u>	<u>Date of Required Removal</u>
1/1/87 - 12/31/87	12/31/94
1/1/86 - 12/31/86	12/31/93
1/1/85 - 12/31/85	12/31/92
1/1/84 - 12/31/84	12/31/91
1/1/83 - 12/31/83	12/31/90
prior to 12/31/82	12/31/89

Any signs not removed within the time limit herein stated shall be deemed a public nuisance, subject to the removal provisions of this Section, and shall be removed by the Town of _____ if the sign owner or property owner fails to do so after being so ordered by the Sign Officer. Costs of said removal shall be borne by the sign and/or property owner and may be recovered by the Town, if necessary, in an action of contract in the District Court, or by placing a lien, in accordance with appropriate state law, on the property from which the sign has been removed.

(f) **Removed Signs to be Stored:** A sign or sign structure removed by the Town shall be held not less than thirty (30) days by the Town during which period it may be recovered by the owner upon paying the Town for cost of removal and storage, and upon payment of any imposed fine. If not recovered within the thirty (30) day period, the sign or sign structure is hereby declared abandoned and title thereto shall be vested in the Town for disposal in any manner permitted by law.

Sample Sign Application Package

To conduct an effective sign review process, and to ensure the uniformity of decision-making in interpreting the Sign Bylaw, it is important the Town require uniform and complete sign application packages. The sign application package should consist of three main parts: a photograph or elevation drawing illustrating and describing the sign location; a sketch and cross-section of the proposed sign (drawn to scale, noting all dimensions, materials, paint color, and mounting methods); and a written application. To save time, effort, and money on the part of both the applicant and the sign officer, a copy of a sample application, the sign bylaw, and sign design guidelines should be given to all applicants.



Protective Development Strategies for Riverfronts and Lakefronts

Introduction and Statement of the Problem

The land located along the water's edge has long been recognized as having significant ecological and aesthetic values. This is particularly true along the upper reaches of the Connecticut River in Massachusetts, which retains much of its natural appearance in most areas, due to the very limited amount of 20th century development within the viewshed of river users. Following several decades of massive public expenditure to reduce pollution of this major regional waterway, the Connecticut River is becoming ripe for new residential subdivision proposals. Without adequate controls, riverfront land is highly vulnerable to development in which new homes crowd the banks and in which all natural vegetation is removed to create broad open views across a succession of suburban back yards, straight down to the water.

However, this scenario is not inevitable. The river need not become the backdrop to linear subdivisions staring at each other from opposite banks. The following sections outline a hopeful strategy, based upon solid and practical experience elsewhere, to guide development with a more sensitive hand. The result can be more creatively designed development patterns which gently fringe this significant natural resource, rather than infringing heavily upon it.

Framing a Positive Strategy for Conservation and Development

Although several states (including Maine and Wisconsin) have, since the early 1970's, required all municipalities to adopt and enforce fairly stringent minimum standards for locating new development in this "shoreland" zone, in the Commonwealth such protection depends upon the local initiative of individual towns and cities, under Home Rule provisions and the Zoning Enabling Act. The paragraphs below introduce the concept of "shoreland zoning" to Massachusetts communities, and provide sample bylaw language which would protect this fragile and unique natural resource from insensitive development, while respecting the property rights of private landowners.

Stated in its simplest terms, "shoreland zoning" is typically implemented through "overlay districts" which set more protective requirements on new development, in terms of the array of permitted uses, lot sizes, building setbacks, and environmental performance standards. In this sense the concept is similar to that employed in aquifer overlay zoning. The overlay districts follow a linear pattern, covering the land within a certain distance of the resource which is to be protected (lakefront, riverfront, oceanfront, or marshland edge). The width of this regulatory zone can vary, but is usually between 250 ft. and 500 ft., measured from the normal high water mark.

Within the shoreland overlay districts, the principal control mechanisms are construction setbacks from the high water mark, restrictions on the removal of natural vegetation within a minimum buffer zone adjacent to the water, and performance standards governing land use activities within the protected zone.

Setbacks, Frontage, and Buffers

Within the Commonwealth there are presently two existing "models" to choose from, in terms of shoreland setback regulations. The Connecticut Valley Action Program has recommended that new construction along rural stretches of the river be located at least 300 ft. from the high water mark. Where the land between an existing road and the river would not allow such a setback, the distance could be adjusted down to half the distance between the road and the river. The Town of Sunderland has enacted such a provision in its zoning bylaw. At the eastern end of the state, six communities along the North River require that the combined shoreland setback and shoreland frontage be at least 300 ft.,

with minimums of 100 ft. for each component. This is a variation on the regulations of the Saco River Corridor Commission in Maine, where the same minimums apply, but where the combined setback/frontage is 500 ft. All of these are valid and legally defensible approaches, and towns could select from among them or blend the requirements into a new package (such as a combined frontage/setback of 400 ft., with a minimum 150 ft. for each component).

Restrictions on clearing of natural vegetation along the water's edge are of at least as great importance as the setback and frontage provisions. Multiple scientific studies have repeatedly confirmed the need to retain a naturally vegetated buffer strip adjacent to the water line, to filter out pollutants from storm-water run-off. Such pollutants include sediment, nutrients from lawn fertilizers, and agricultural pesticides. An absolute minimum of 50 ft. (preferably 75 ft. or more) is needed to protect lakes, rivers, and marshes from these substances, according to published research results. Within that area, clear-cutting should be prohibited; judicious thinning can be allowed through conditions attached to special permit approval. Along the North River, the standard employed in the 100 ft. buffer strip is that "the selected and dispersed cutting of vegetation for wildlife management, or to create a view of the river...shall cause negligible adverse environmental impact, particularly with respect to the stability of the riverbank and the aesthetic character of the river shoreline." The standards further specify that "no more than 35% of the number of trees, 6 inches DBH (diameter 4 1/2 ft. above the ground) or larger shall be cut in any 10 year period." In "second-growth" woodlands where there are relatively few trees of this diameter, the standards could be revised to "25% of the number of trees, 4 inches DBH," etc.

Where there is no pre-existing natural vegetation, towns could require that the developer "provide vegetation which will screen the subdivision from the water," as stipulated in Vermont's "Act 250" legislation. The width of this re-vegetated buffer strip should be at least 50 ft., and the standards should specify that the plant material consist of indigenous trees and shrubs (such as sugar maple, white oak, birch, white pine, hemlock, winterberry, elderberry, viburnum, wild rose, eastern red cedar, etc.).

Shoreland Sub-Districts

Because land alongside rivers, lakes, and other water bodies, encompasses a wide variety of current man-made and natural conditions, it makes sense for shoreland overlay zones to include different sub-districts that recognize the existing character of the land and previous development patterns. In Maine, for example, the state's Mandatory Shoreland Zoning Act contains criteria and standards for three sub-districts:

1) Limited Residential-Recreational District: This is typically the most extensive type of district, and usually applies to areas of town which are not intensively developed and which do not possess severely limiting environmental characteristics (as detailed in "3" below). Most land uses normally permitted in residential districts would be allowed here. This would generally prohibit even small-scale commercial and industrial uses. If a town's present zoning allows such uses as, for example, in a "Rural General Purpose Zone," it should, in the shoreland district, at least prohibit all uses that present a higher potential for environmental pollution (e.g., filling stations, car washes, bulk fuel storage, junkyards, truck terminals, and any facilities using or handling hazardous or toxic materials).

2) General Development District: This district would include all "shoreland" i.e., land within 250 to 500 ft. of the high water mark, that is already intensively developed for business, industry, commercial recreation, mineral extraction, or small-lot residential subdivisions. Such districts are designated primarily to exclude them from the typical shoreland requirements regarding building setback, vegetative thinning, and allowable land use, as such provisions would not be as applicable, necessary or sensible in existing built-up areas.

3) Resource Protection District: This district embraces all wetlands (both tidal and freshwater), the federally-delineated 100-year floodplain, and areas having unstable soils (subject to slumping, mass

movement, or severe erosion, when over two acres in extent). These areas are limited to agriculture and timber harvesting, with special permits issuable for "small non-residential facilities for education, scientific or nature interpretation purposes," and for "public and private parks and recreation areas involving minimal structural development" (but specifically excluding campgrounds).

In order to protect special places in which a development ban could pose legal obstacles (such as areas of significant wildlife habitat, or natural sites of significant scenic or aesthetic value, including those identified by federal, state or municipal government), a fourth type of district could easily be created. In this "Resource Conservation District" the concept of "compulsory clustering" of new development could be introduced. Development would not be prohibited, but it could be required to be located as far as possible from the resource to be protected (such as a deer wintering area, a unique geologic formation, waterfowl nesting sites, a particularly scenic view, etc.). This approach works best where the overall development density is fairly low, such as two acres per dwelling unit, in the aggregate. It should be noted that this approach would not necessarily require attached-wall (multi-unit) housing. If a town's desire is to maintain a single-family character, this district could be limited to "clustering" of detached single-family homes on individual, down-sized lots. The residual land, left over from such down-sizing, provides the vehicle for protecting the natural resource for which this district is created.

Performance Standards

Clear, detailed standards specifying how certain aspects of new development should be carried out are highly recommended. When reviewing applications for new development in the shoreland zone, the special permit granting authority will be able to refer to these standards, which help to ensure fair and consistent decisions. Compliance with these standards also reduces uncertainty for applicants, who can expect approval if their submissions meet the stated requirements. Such standards typically address a broad range of environmental and aesthetic concerns, and may include many of the "good neighbor" performance standards listed in the section of this design manual dealing with Site Plan Review procedures.

In addition to standards on setbacks, frontage, vegetative thinning (or re-vegetation) discussed above, the bylaw should contain explicit language relating to other possible negative impacts of shoreland activities, as detailed below.

1) Docks and Piers: Access to the water from lots in any proposed subdivision shall be via one common dock, whose length shall not be greater than __ ft., and whose width shall not be greater than __ ft.

2) Campgrounds: The setback standards for recreational vehicle sites shall be the same as for structures, but the setback for tent sites may be halved. Vegetative thinning (or re-planting) standards shall be as for structures in all cases.

3) Agriculture: Soil shall not be tilled within 50 ft. of the high water mark, and tillage of more than 20,000 sq. ft. within the shoreland zone shall be conducted in conformance with the provisions of a Conservation Plan meeting the standards of the local Soil and Water Conservation District.

4) Timber Harvesting: No substantial accumulation of slash shall be left within 50 ft. of the normal high water mark. Beyond that distance, within the shoreland zone, slash shall be disposed of so that it lies on the ground and no part extends more than four feet above the ground. The vegetative thinning standards specified for view-clearing in residential development shall also apply to timber-harvesting within 100 ft. of the normal high water mark. Beyond that point, harvesting shall be conducted on a "sustained yield" basis, with no more than 40% of the volume of trees removed with any 10-year period.

5) Septic Systems: Sub-surface disposal systems for septic wastes shall be located no less than 150 ft. from the normal high water mark.

Farmland and Open Space Protection

The Problem

One of the most vexing problems facing small towns today is the rate at which farmland is being developed for residential use. Such conversions devastate rural character, and further compromise an already beleaguered industry. The meadows in which children once played or cows once grazed are being carved into house-lots throughout the length of the Valley. Long-term residents see their towns changing at an alarming pace and feel helpless to break the pattern of conventional suburban sprawl (often inadvertently encouraged by "protective" bylaws containing development standards inappropriate to rural areas).

One of the most common reactions to new development is to increase the minimum residential lot size, in the mistaken belief that, as new homes are spread farther apart, the town's open rural character will be retained. Although this is a laudable goal, this method often produces the opposite result, with remaining open land being subdivided at an even faster rate. To worsen the situation, such developments nearly always consume the entire parcel being sold, leaving no residual open space for farming, natural enjoyment, or rural beauty.

The traditional character of Massachusetts towns has evolved gradually over several centuries, during which time farmsteads and village centers grew slowly and organically, without the straitjacket of standardized land-use regulations. Rural towns often contain several villages where development is moderately dense, with the remainder of the land dotted by farms. If the goal is to maintain town character, then a method must be found to preserve agricultural land and open space surrounding natural groupings of residential development.

Two approaches to farmland preservation in Massachusetts which have enjoyed some success over the past decade are: 1) the state's Agricultural Preservation Restriction (APR) program (through which development rights to agricultural land are bought and held by the Commonwealth, with future land use limited to agriculture); and 2) various land trusts, which function in a broadly similar manner, utilizing private funds and land donations. However, both of these programs are seriously limited by shortage of cash and escalating land prices all across the state. For example, the Commonwealth's investment of \$45 million over the last ten years has protected 18,500 acres of farmland, which accounts for only 3% of this non-renewable resource. Most of the remaining 97% lies unprotected and zoned for conventional development.



Farmland parcels adjacent to moderately sized lots in Hadley's historic town center illustrate the land-use pattern achievable by implementing the development-and-conservation standards contained in this section of the Design Manual.

What is urgently needed is a practical, low-cost approach to land conservation which simultaneously preserves farmland and significant open space, while also allowing landowners full equity value for residential subdivision of their land. This is precisely what the following "Farmland/Open Space Conservation and Development Bylaw" has been designed to achieve. Because it allows for the same number of lots under conventional subdivision, sellers receive full value for their land. It also requires the setting aside of half the acreage for agricultural or open space uses, in perpetuity, thus meeting the second goal as well. In addition, road and utility construction is generally reduced significantly, thereby saving on development costs and public expenditures for snowplowing and periodic repaving.

Districts for Implementation

Two types of districts may be defined by towns for the implementation of this type of bylaw. The first are areas in which farming is predominant. These may be identified by overlay maps locating the soils which are most suitable for agriculture, land which is currently being farmed, and land already under the Agriculture Preservation Restriction program. The opinions of farmers regarding which areas are most important to safeguard should be solicited and considered carefully.

A second possible type of district is an open space protection district. This type of area, if not intensively farmed, would have other scenic or natural resources worth protecting. Criteria for defining this type of zone include: large tracts of undeveloped land; aquifer recharge areas; sites identified under the Massachusetts Natural Heritage program (administered by the Massachusetts Department of Fisheries and Wildlife); areas of scenic beauty within the town (perhaps as identified in the Massachusetts Landscape Inventory, prepared by the Massachusetts Department of Environmental Management in 1982); and areas of historical or cultural interest. These criteria, either singly or as a group, are important considerations in land preservation.

These districts should be mapped, with a written explanation of why the boundaries were drawn and why neighboring lands were either included or excluded. This would strengthen the case for implementing the bylaw, and would make it easier to defend, if the zoning boundaries are legally challenged.

Farmland/Open Space Conservation and Development Bylaw

1. Purpose

The purpose of this bylaw is to maintain the rural, natural, and scenic qualities of the Town of _____, Massachusetts by preserving farmland and significant open lands while allowing landowners a reasonable return on their holdings. Toward this end, the creation of three (3) or more lots for residential use, whether or not constituting a subdivision, from a property or on a set of contiguous properties in common ownership located within either a Farmland Protection District or an Open Space Protection District, shall be allowed only by Special Permit from the Planning Board, in accordance with the criteria set forth below.

2. Establishment of Overlay Districts

The Farmland Protection Districts and Open Space Protection Districts are herein established as overlay districts, described on a map on file with the Town Clerk.

3. Use Regulations

Within a Farmland Protection District and Open Space Protection District, the land-use and