Designing the Future to Honor the Past

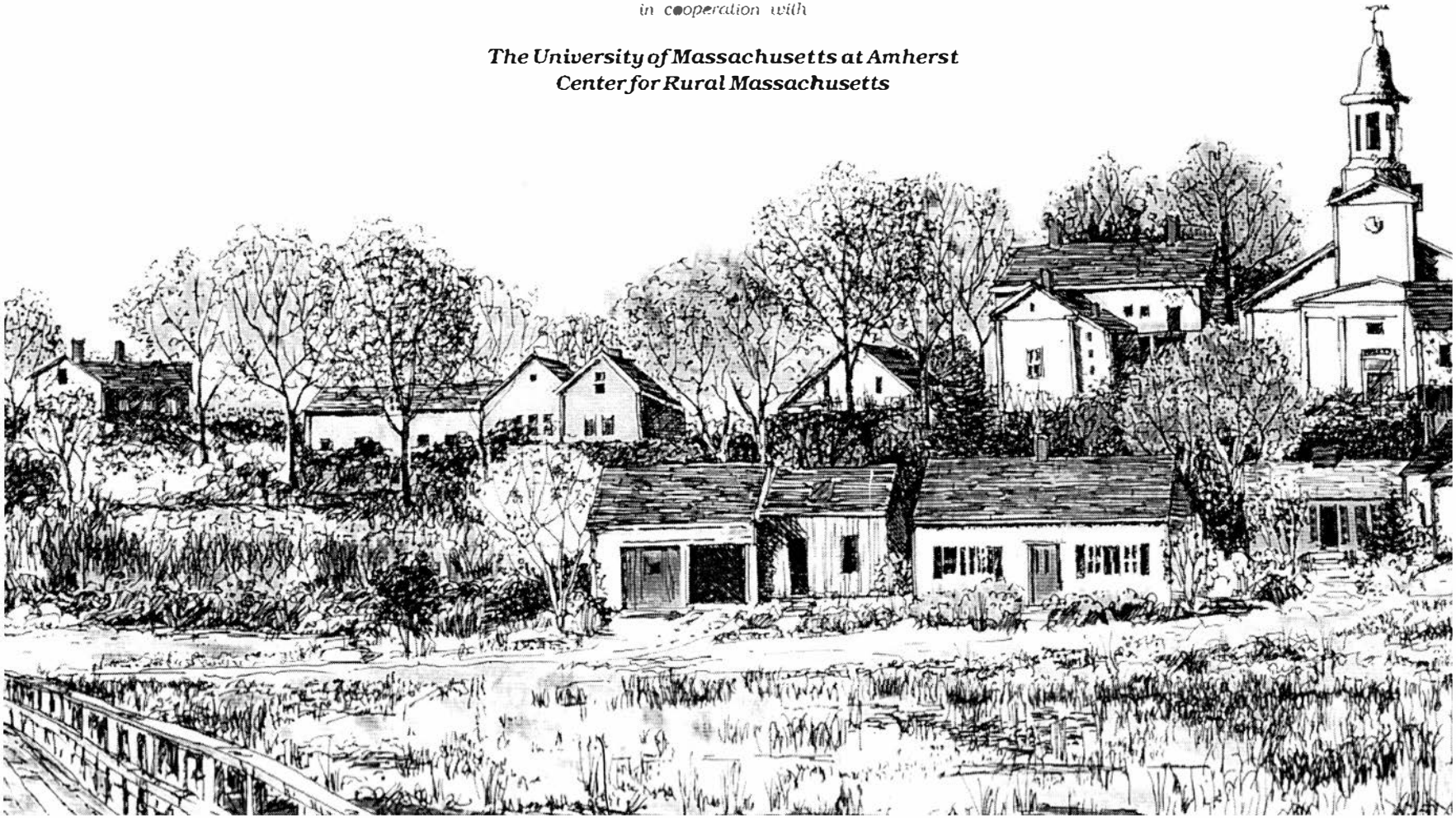
Design Guidelines for Cape Cod

Prepared by the

Cape Cod Commission and Community Vision, Inc.

in cooperation with

The University of Massachusetts at Amherst
Center for Rural Massachusetts



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Cape Cod Commission Staff

Armando J. Carbonell, Executive Director
Margo L. Fenn, Chief Planner/Deputy Director

Project Coordinators:
Christina C. Dierker, Senior Planner
Sarah Korjeff, Preservation Planner
Sharon J. Rooney, Planner

Contributors:
Patty Daley, Staff Counsel
Eduard Eichner, Water Resources Planner
Dennis Finn, Planner
Dorr Fox, Chief Regulatory Officer
Greg Guimond, Planner
Dan Hamilton, Communications Coordinator
Gail Hanley, Head Clerk
Pat Hughes, Marine Resources Specialist
Robert Mumford, Transportation Program Manager
Katharine Peters, Commission Clerk
Pam Rubinoff, MA CZM Regional Coordinator
Kathy Sferra, Planner
Paul Tilton, Transportation Engineer

Cape Cod Commission Members

David Ernst, Chair, Wellfleet
Ken Brock, Vice-Chair, Truro
Greg Silverman, Esquire, Falmouth
Madeleine Bebout, Eastham
George Benway, Jr., Mashpee
Gloria S. Brundage, Ph.D., Native American Minority
Herbert Olsen, Orleans
James Falla, Esquire, Harwich
Shirley Gomes, Governor's Appointee
George Jackson, Minority
Sumner Kaufman, Barnstable
David Kellogg, Yarmouth
Donald LeBlanc, Dennis
Victoria Lowell, County Commissioner
Donald Near, Brewster
Richard M. Prince, Bourne
Alix Ritchie, Provincetown
Bruce Rosinoff, Sandwich
Andrew Young, Chatham

Community Vision, Inc.

John Altobello, Designer
Bill Austin, Designer
John Fabel, Geographer/Designer
Todd Richardson, Landscape Architect
Joan Rockwell, Landscape Architect

Center for Rural Massachusetts
Hugh Davis, Director
Christine Reid, Project Coordinator

Additional assistance from:
Randall Arendt, Vice President Natural Lands Trust

Graphics:
Todd Richardson, Community Vision, Inc.
Chaunce Powers, Architect, Hyannis, MA

Computer Perspectives:
David Munson, Design Mode, Jamaica Plain, MA

Photography:
John Fabel, Community Vision, Inc.

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1. Introduction

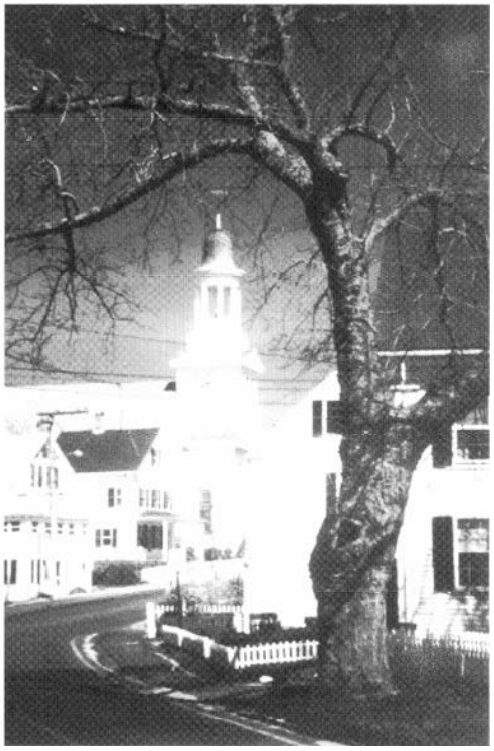
Cape Cod is a special place, unique in both its natural environment and historic character. It has a rich, diverse landscape that includes compact historic villages connected by a network of wetlands, ponds, forest and open space. It is a place of abundant nature, surrounded by and connected to the sea. It is a place with distinctive architecture, combining traditional forms and materials in a variety of different styles.

The special character of Cape Cod is threatened by inappropriate development. During the growth surge of the last several decades, many of the Cape's villages have been overshadowed by strip commercial developments and rural land has been lost to extensive residential subdivisions. Uncontrolled growth has undermined the viability of village centers and diminished the unique character of many Cape towns. While there have been efforts to return to compact and mixed-use forms of development to preserve rural land and protect sensitive resources, these attempts are often limited by land consumptive zoning requirements and a lack of good design controls.

In the 1980s, the population of Cape Cod grew 26.1%. In the period between 1971 and 1990, over 35,000 acres of forest and agricultural land were built upon, representing an increase of 58% in developed land. As a result, traffic congestion is worsening. Open space and wildlife habitats are disappearing. Waterfront development in sensitive areas is increasing.

Residents and visitors alike are expressing concern over the loss of community character, sense of place, and environmental quality resulting from land consumptive development patterns that are both inefficient and incompatible with the Cape's tradition.

The Cape cannot sustain unplanned growth without adverse impacts to its natural and cultural resources. In order for Cape Cod to preserve its distinctive regional character, development must follow more compact land use patterns that are compatible with its traditional character and give adequate consideration to environmental constraints and local services. Development standards must address issues of transportation, affordable housing, groundwater quality, and economic well-being while fostering a sense of community, a pride of place, and an awareness of the natural environment. It is this vision of the Cape's future that is articulated in the county's Regional Policy Plan and encouraged by the design guidelines presented in this manual.



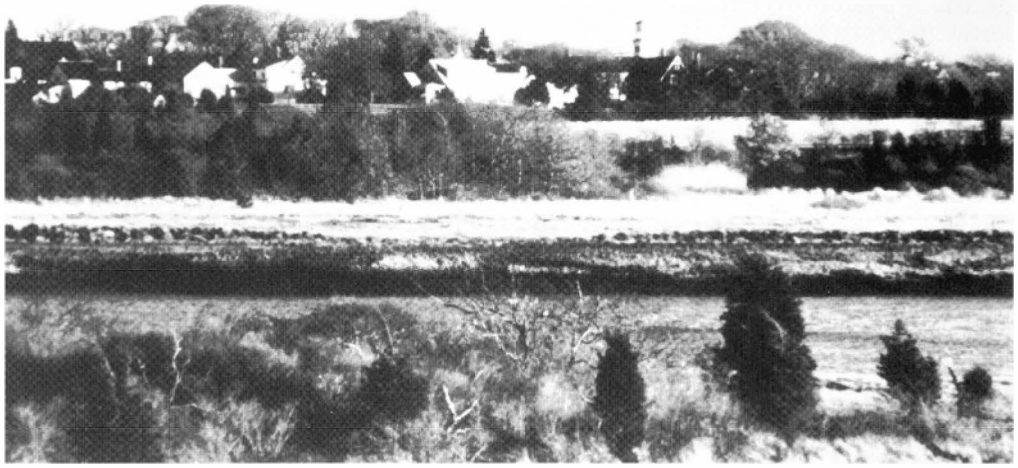
A classic Cape Cod village with compact land use patterns

Urban sprawl has destroyed the region's character in some areas

2. Purpose

This manual was created as an ideabook for both the professional and the layman. The following sections present design

guidelines which will be incorporated into the Cape Cod Commission's Development of Regional Impact review process. These guidelines are not regulations, but provide guidance as to how to comply with the Community Design section of the Regional Policy Plan. They will also provide a bridge between the Regional Policy Plan and the Local Comprehensive Planning Process. Local Planning Committees may use these guidelines to develop locally appropriate design regulations which reflect their town's own character and needs. They may also incorporate these guidelines into their site plan review process, use them to direct changes in local bylaws and regulations, or use them as a guide for development in village centers, revitalization or preservation districts. Developers and builders may use this manual as a guide to desirable development forms and practices.



Traditional coastal village

3. Designing With the Character of Cape Cod in Mind

Historical Patterns:

Cape Cod is defined by its coastal villages, structures, and landscapes. The character of these elements and the patterns they form are reflections of the region's history and natural environment. Composed of sand, gravel, silt, clay and boulders left behind by the glaciers, Cape Cod is a region where landscapes and structures are vulnerable to damage from wind and water. When Native Americans inhabited the area, the Cape was primarily forested by oak, beech, and pine. Pilgrims arrived in the early 1600s and began clearing the land for agricultural uses. During the 17th century, early Cape villages were established near the more sheltered shores of Cape Cod Bay and along creeks, marshes and rivers which fed into it. These villages had easy access to harbors, but stayed far enough away to escape the ocean's fury.

Cape Codders adapted simple English architectural styles to the local climate and created the Cape Cod House, visible throughout this region. Basic forms such as this were usually expanded incrementally and were well suited to the agricultural life predominant in the area. As agriculture became more intensive during the 18th century, forests were felled and burned, creating more open land. By the end of the century, heavy burning and clearing had contributed to creation of extensive dune areas on the outer Cape, and exhaustion of the soil encouraged the turn to a maritime industrial focus.

With the growth of maritime industries in the first half of the 19th century, the Cape's wealth increased and its villages expanded to include larger homes in more recent architectural styles. Elaborate captains' homes were constructed within easy reach of local harbors. Other indus-

tries related to the sea and local natural resources developed, such as glass manufacturing, cranberry harvesting, and salt works. Farming continued in some areas, while the pitch pine, quick to regenerate, began to dominate those areas which agriculture had abandoned.

Due to changes in coastal trade policies and fishing technology in the latter half of the 1800s, local maritime industries fell into decline and the region's economy began to change. The Cape's wildlife and natural environment drew religous camp meetings as early as 1819 and visitors such as Thoreau in the 1850s. With establishment of rail service in the mid 1800s, the region grew significantly as a Victorian tourist destination. At this time, development shifted primarily to the south shores of Cape Cod. Large vacation homes and resorts were constructed along these shores, but village settlement patterns continued.

Development through the 20th century has responded largely to proliferation of the automobile and the corresponding expansion of the road system. As access to the Cape has improved, the tourism industry has grown substantially and the year-round population has increased. New development has been focused along roadway strips, coastal areas, and in large residential subdivisions. Some aspects of these new patterns have threatened the traditional character and environment of the Cape. In order to preserve the character which brings people here to visit and to work, new development must be guided to recognize and build on Cape Cod's traditional patterns.

A typical Cape Cod house

Traditional village center structure

Sustainable Development:
Sustainable development refers to a type and level of development that does not adversely affect an area's resources. It implies guiding growth in ways that allow present needs to be met without compromising the ability of future generations to meet theirs. This manual is designed to address one aspect of sustainable development: physical design. Sustainability involves cooperating to achieve goals that affect the region as a whole, such as solving transportation problems, preserving environmental quality, maintaining a viable economy, or providing affordable housing. Sustainability can only be achieved through a combination of efforts, including natural resource conservation and manage

ment, innovative land use planning, and energy conservation. This approach to development is critical to the economic viability and environmental stability of Cape Cod.

For example, Cape Cod communities must work together to develop alternatives to the automobile if serious and escalating traffic congestion is ever to be reduced. A successful alternative transportation system, which links Cape Cod to other regions and connects the Cape's communities, involves much more than any one town can provide. Cape Cod communities must work collectively to increase year-round bus service, improve passenger rail service, extend the bikeway system, make roadways bicycle friendly, expand seasonal shuttle service, and increase the number of walking centers. Similarly, the Cape must provide an adequate supply of affordable housing to meet the needs of its diverse population. Without these efforts, the Cape will not be able to sustain continued development.

Twentieth century sprawl

Establishment of growth centers, which seek to preserve the rural character and village lifestyle of the region while protecting the Cape's fragile resources, is another way of achieving sustainability. Growth centers are defined as existing and new areas determined to be suitable locations for further growth and development. An analysis of natural and cultural resource constraints, existing infrastructure, and local and regional needs must be completed before growth centers can be properly designated. Once these factors have been considered and areas are designated, performance standards and incentives can be developed to further encourage sustainable development through techniques such as open space preservation and architectural design.

Sustainability requires an understanding of the unique qualities of the Cape. These qualities include natural and cultural resources such as coastal areas, open spaces, typical structures, roadways, and landscapes. All of these elements interrelate to form larger distinctive patterns which define the character of Cape Cod. The value of preserving these qualities must be balanced with the equally important issues of accessibility, economic vitality, and quality of life. Consideration of all of these issues as complementary and interwoven, and an awareness that conscious choices must be made for the future, lays the groundwork for sustainable development on Cape Cod.

4. Using the Manual

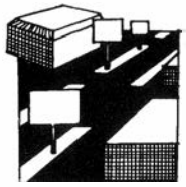
This design manual is organized into three parts: Design Guidelines, Case Studies and Making It Happen. The Design Guidelines are illustrated by the Case Studies, which were selected to represent four different types of development on Cape Cod. The Making It Happen section describes how these guidelines can be adopted by individual communities and is followed by a resource list.

Design Guidelines: The guidelines offer a rational approach to appropriate design on Cape Cod. They can be applied as general principles, irrespective of the kind of development, and are structured to address broad design concerns first, and then work progressively toward more detailed design issues. The various ways in which these principles can be employed is shown through their application to the case studies. Not all of the guidelines will apply to every community. However, all towns should be able to apply some of the guidelines based on their particular situation.

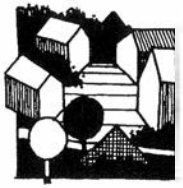
Case Studies: The case studies present examples of four specific types of development and are not intended to cover all development scenarios on Cape Cod. They demonstrate how proposed development, following the recommendations of the guidelines, could be integrated into traditional Cape Cod patterns. They also serve as models, offering ideas and solutions for development issues and problems. The design guidelines are applied to each of the following development scenarios:

• *Historic Village Centers* - illustrating new development integrated into existing historic villages in a way that preserves and enhances streetscapes, open and public spaces, historic architecture, pedestrian amenities, mixed use and a sense of history.

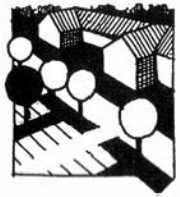
• *Commercial Strip Redevelopment* - describing how, through incremental steps, an existing commercial strip could evolve into a pleasant, pedestrian-oriented place with a traditional character.



• *Compact Residential Development* - presenting guidelines for creating developments that reflect the compact forms of traditional settlement patterns, protect open space, foster a sense of community, and reinforce existing town centers.



• *Large Scale Commercial Development* - demonstrating strategies for creating pedestrian oriented, mixed-use developments that are integrated into their surroundings and reduce the visual impact of large-scale commercial buildings.



Making It Happen: This section discusses strategies for achieving the desired forms of development. It explains how communities can revise local zoning and provides a discussion of the legal tools and costs involved in such revisions. It also describes how towns can offer incentives to developers and promote community involvement in the planning process.

5. Definitions

The definitions outlined below are designed specifically for their application in the design manual. Except where specifically defined herein, all words in "Designing the Future to Honor the Past" carry their customary meanings.

Adaptive Reuse - Conversion of an existing structure to a use other than that for which it was designed. If an historic structure is involved, the conversion strives to maintain the structure's historic characteristics.

Alternate Modes of Transportation - Non- automobile transportation such as shuttle bus service, trolleys, transit, rail, pedestrian, bicycle and marine transportation.

Backlot Development - The creation of new building lots behind existing frontage lots, as part of an effort which allows development to occur in a more clustered and less linear fashion.

Bicycle-friendly Streets - Streets that provide safety and accessibility for bicyclists. These streets promote the use of bicycles as a transportation mode and provide a throughway where few conflicts with motorists exist.

Cluster or Compact Development - A form of development that permits a reduction in lot area requirements, frontage and setbacks to allow development on the most appropriate portions of a parcel of land in return for provision of a compensatory amount of permanently protected open space within the property subject to a development application.

Growth Centers - Existing and/or new areas designated by the Cape Cod Commission and towns as suitable locations for new growth and development.

Infill Construction - The development of new housing, commercial or other buildings on scattered vacant or underutilized sites within existing substantially built-up areas.

Mixed-use Development - The combination of two or more land uses within one building, project, or site. The most common combination of uses is business/retail and residential.

Non-structural Mitigation - Measures that reduce automobile trips and optimize efficient use of existing roadways without costly, structural improvements. These techniques include: changes to pavement markings, signage, signal timing, turn restrictions, changes in traffic patterns, variable message signs, car and van pooling, shuttle services, transit subsidies and

off-peak scheduling. Other effective design measures include limiting access drives off of major roadways, connecting adjacent developments to reduce vehicle trips onto the main road and providing bicycle and walking paths.

Redevelopment - The reconstruction, reuse or change in use of any developed property including any increase in intensity of use, enlargement of a structure, and the conversion of a seasonal dwelling to year round use.

Strip Commercial Development - Continuous or intermittent linear roadside development, generally one store deep and characterized by multiple roadway access points, highly visible off-street parking and an assortment of commercial uses with direct access to abutting roads.

Traffic-calming Strategies - Techniques to reduce the dominance and speed of motor vehicles on roads that are well used by pedestrians and bicyclists.

Transfer of Development Rights (TDR) - A technique that allows owners of land to transfer all or some of the rights to develop that land to another designated area.

Vernacular Architecture - Architectural forms which are indigenous to an area, having developed in response to available materials, environmental conditions and local cultural traditions.

DESIGN GUIDELINES

1. **Selecting a Site for Development**
2. **Developing the Site**
3. **Special Considerations for the Coast**
4. **Planning Open Space**
5. **Streetscapes and Roadways**
6. **Architecture**
7. **Adaptive Reuse**
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9. **Landscaping**
10. **Alternatives to the Automobile**
11. **Accessibility**
12. **Parking**
13. **Utilities**
14. **Outdoor Lighting**
15. **Signage**

1. Selecting a Site for Development

A region as unique as Cape Cod possesses a special set of natural, historic, and cultural resources that interrelate to form distinctive landscape and land use patterns. The following resources should be examined to determine the suitability of a site for specific types of development:

Natural Resources

- Vegetation
- Water Bodies
- Drainage Patterns
- Aquifers
- Coastal Features
- Topography
- Landforms
- Slopes
- Soils
- Wetlands
- Dunes
- Wildlife Habitats

Cultural and Historic Resources

- Existing Structures
- Archaeological Sites
- Views and Landscapes
- Scenic Roadways
- Trails
- Farms
- Fisheries
- Cranberry Bogs
- Harbors

The Provincetown coastal landscape

The following site selection guidelines respond to two fundamental planning goals:

Preservation of the coastal and rural landscape and land use patterns. The Cape cannot continue to lose its rural landscape and still maintain its unique and complex character. Diminished would be the web of woodlands, meadows, bogs, marshes, heathlands and associated wildlife. Lost would be farming, cranberry harvests, and other agricultural activities. By developing close to or within village centers and designated growth centers, while preserving outlying areas, the rural landscape is maintained. Compact development, covering less land, can adjust to various aspects of the terrain, thus preserving and fitting in with sensitive ecological systems and the many natural, cultural, and historic resources listed above. Preservation of the natural landscape is also essential to maintain the quality of the Cape's drinking water and the purity of fishing grounds and swimming areas.

Preservation of existing village forms. New developments that are built close to or within village centers can enhance or help to restore the economic and social vitality found there. This vitality is largely the result of a mix of residential, commercial, and municipal uses that are interdependent, mutually supportive, and easily accessible by foot or bicycle.

This manual, in subsequent sections, presents design guidelines that demon-

strate how the patterns of successful village communities can be preserved and extended while conserving what remains of the surrounding rural landscape.

The Site Selection Design Guidelines are pertinent to all development, but are particularly important for larger Compact Residential Developments and Large Scale Commercial Developments. The size of these developments alone has a significant impact on the landscape. (Refer to the case studies on these topics.)

1a. Preserve the natural, historical, and cultural patterns of the surrounding landscape. Analyze the resources of a site to determine its suitability for development. Map and evaluate ecological resources so that meaningful decisions can be made about protecting them. Many of these resources are protected by local, state, and federal laws and regulations. Important historical and cultural development patterns in need of preservation exist throughout the Cape. In particular, elements of the cultural and historic landscape such as gardens, estate grounds, town commons, parks, farmlands, orchards and harbors should be preserved.

1b. Locate new development in or immediately adjacent to town, village, and growth centers to reinforce such centers and to preserve surrounding rural areas. Areas that can sustain growth should be identified during each community's local planning process as growth centers. Compact development should be encouraged within or immediately surrounding these centers. This provides greater opportunity for pedestrian and bicycle access, mixed use, and affordable housing. It also reinforces the character of the Cape as a landscape of villages and towns surrounded by networks of undeveloped rural land. These undeveloped rural areas will not exist if strip development continues to expand.

1c. Select a site with minimal physical limitations and environmental constraints. Develop only those areas which are most suitable for development. Avoid steep slopes, barrier beaches, dunes, coastal banks, wetlands, important habitats and other environmentally sensitive areas. Select areas within watersheds/recharge areas with development capacity; avoid watersheds to resources already exceeding critical nitrogen loading limits or recharge areas to eutrophied lakes. Conserve these areas as open space for environmental protection, recreational uses, or public spaces. Maintain appropriate setbacks from protected resources. (See Open Space, Streetscapes and Roadways, and Landscaping sections.) Consider traffic issues such as safety problems, existing level of service, and alternative access/egress.

1d. Retain the maximum amount of existing vegetation on the site. Where possible, develop previously disturbed areas. This reduces disruption of the site and surrounding landscape, which in turn facilitates integrating the development into existing natural and land use patterns.

1e. Cluster development in less sensitive areas wherever possible. Clustered residential subdivisions help to maintain the rural landscape pattern of the Cape and also allow for conservation of important environmental resources. Preserved open space within such developments should be designed to be contiguous and interconnecting with adjacent open space and should be subject to permanent conservation restrictions.

2. Developing the Site

As with the previous section, the following guidelines are concerned with preserving the environmental integrity of a site while providing a high-quality built environment. In order to achieve these goals, it is recommended that the site development process should incorporate the following elements:

2a. Minimize the impact of development on the site. Reduce cut and fill to minimize disturbance to existing topography and vegetation. Clear only where needed for construction, and protect all disturbed areas from erosion and sedimentation. Develop only those areas of the site where the existing slopes are suitable for the proposed use. One benefit of constructing only on suitable slopes is reduced construction costs.

2b. Lay out buildings, roads, and parking lots after sensitive areas and buffers for these areas have been established. Divide large parking lots and buildings into smaller components as an alternative to extensive grading and paving.

2c. Site buildings to respect the horizon line. The Cape is a relatively flat, wooded or open landscape with low horizons emphasized by a low tree canopy. Many historic buildings are nestled in valleys, rarely breaking this canopy. Buildings sited at the tops of hills break the horizon line, dominating the landscape. On hilly

Buildings sited to not dominate the horizon

landscapes, site new buildings near the middle or bottom of slopes and incorporate a backdrop of vegetation or landforms where possible. Plant new trees around buildings in exposed, open areas. Reserve high points for open space views of the surrounding landscape.

2d. Minimize side and front setbacks to respect traditional village center forms and encourage backlot development, located to the rear of existing lots. Front and side setbacks play a major role in determining the actual location of buildings. Reduced side and front setbacks do not diminish the quality of public space and they allow for larger private rear yards, which may be used to screen adjacent development. This approach may not be appropriate for more rural settings.

2e. Define a sense of entry and arrival into the development. An important quality contributing to the sense of a place is the experience of entering and passing through a village or development. This experience can often be heightened by designing partial, anticipatory views into the development, creating a sense of "something just around the corner." This theme should be repeated up to the front door of an individual building within a village or development.

A sense of entry

3. Special Considerations for the Coast

The coastline of Cape Cod changes constantly in response to the actions of ocean and wind. Dunes, beaches, and tidal flats are made up of sediment deposited by wind, wave action and storm overwash. These resource areas protect landward areas from flooding and erosion by providing a buffer from waves and seas elevated by storms. Any development in or on these resource areas will affect their buffering capacity.

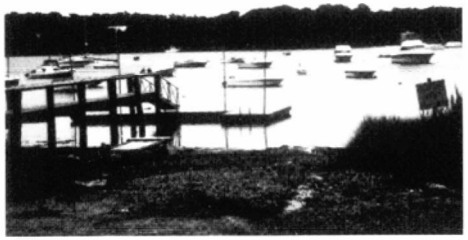
Coastal banks often serve as a major source of sediment for beaches, dunes, and barrier beaches. Low-lying coastal floodplains also buffer and protect upland areas from severe storm conditions. Development in the floodplain is susceptible to damage caused by waves and inundation by flood water. Since the floodplain contains areas where the groundwater table is close to the surface, pollutants from septic systems and fuel tanks in groundwater may affect marine water quality. While the Cape's beaches and dunes are moving horizontally, the entire coastline is also moving vertically in response to relative sea level rise. Today, Cape Cod loses approximately 25 acres of upland annually as a result of relative sea level rise.

Barrier Beach

Salt marshes produce organic matter that is exported to coastal waters, forming the basis of the food web. Marshes also provide spawning and nursery habitats for fish and shellfish, and provide shelter for many aquatic and migratory birds. Salt ponds and coastal embayments provide excellent habitat for marine fish and are the landward end of anadromous fish runs.

Maintaining the environmental quality of these resource areas is critical to their continued productivity. Runoff from paved surfaces, lawns and gardens, nutrients from septic systems, gasoline and oil, and sanitary waste from boats can degrade the quality of salt marshes, salt ponds and coastal embayments. Dredging and use of piers by motorized vessels can degrade and destroy shellfish habitat.

The Cape's coastal areas are important recreational and economic resources. While providing storm protection, many coastal beaches, dunes, and tidal flats are also public amenities. Salt ponds and coastal embayments are heavily used by recreational boaters and by recreational and commercial fishermen. Many waterfront docks have been constructed in these coastal waters.



Typical docks and piers

This section includes guidelines for development and redevelopment occurring along the coast, in order to protect the quality and quantity of the Cape's coastal resources. The following guidelines are divided into three sections: coastal hazards, public access and accessory structures. The Regional Policy Plan details goals, objectives, and methods that are imperative for protecting coastal resources. They are principles to be followed when considering development along the coast.

One of the Cape's coastal beaches

Coastal Hazards

3a. Identify coastal hazards early in the site planning process. Coastal hazard areas are mapped by the federal government and are used for both building standards and flood insurance purposes. The "V zone" (or velocity zone) delineates the coastal high hazard area, which is vulnerable to direct wave attack during a 100-year storm. The "A zone" shows the boundary of the area that would be inundated by the 100-year flood, but not affected by the impact of waves. Site buildings and accessory structures outside of these coastal hazard areas wherever possible.

3b. Avoid development and redevelopment on barrier beaches. Building on barrier beaches may impede the stability of the landform by reducing its ability to respond to natural forces. Although state law does not prohibit building on barrier beaches, the Wetlands Protection Act and local bylaws do regulate activities that may impact the resource area. New seawalls, revetments and bulkheads are not appropriate and may be prohibited.

3c. Where redevelopment on a dune or barrier beach does occur, elevate structures above the top of the dune. Movement of sand is necessary to maintain the form and function of a dune. Depending on the location, this elevation can range from 2-1/2 feet to 5 feet above the top of the dune. For aesthetic reasons, consider screening these elevated structures with lattice work designed to break away during a storm.

3d. Set buildings back from eroding shorelines. It is recommended that in areas where the shoreline is eroding, the setback for all new buildings and septic

Storm damage to poorly sited home

systems be at least 30 times the average erosion rate of the dune or eroding bank. Shoreline change maps, developed by the Coastal Zone Management Office, are one tool to evaluate long term erosion trends. Interpretation of historic photos is another tool for evaluating the vulnerability of certain areas.

3e. Stabilize disturbed coastal landforms with plantings. Landscaping around redeveloped structures on barrier beaches and dunes should include planting of beach grass and other appropriate beach vegetation and use of snow fence to trap windblown sand and stabilize the landform. Disturbed coastal banks can be effectively stabilized with a variety of salt tolerant species (as referenced in Section 9: Landscaping). An integral part of coastal landscaping is regular maintenance. Because these are dynamic areas, vegetation growth can be affected by movement of sand, and disturbed by coastal storms. These areas may need to be periodically replanted, particularly after storms, to maintain effective erosion control.

Public Access

3f. Maintain and enhance visual access to coastal areas. Public and commercial facilities that are on the waterfront, or offer a view of a coastal landscape, should be designed to provide visual access to the public. This can be done by siting multiple buildings in such a way as to provide views between them, or, if one building, by providing an arch or walkway to provide a view to a passersby. Building design should take advantage of natural slopes to fit into the landscape and not obstruct the coastal landscape and water views. Additionally, visual impact from the water should be considered when designing the structure, so that the maritime character and natural beauty of the shore are maintained.

3g. Maintain and enhance physical access to coastal areas. Public access to the shoreline should be provided in all appropriate locations. On waterfront properties, access to the shore should be

Maintain and enhance visual access to the coast

carefully restricted to a well thought-out route. Thorny shrubs could be used to keep pedestrians on the path in sensitive, erosion prone areas. Commercial businesses can benefit from providing waterfront access and should encourage the public to utilize these areas by incorporating benches, walkways and signage in the design. Many communities have identified public access projects that should be considered when developing along the waterfront. Access should be designed to accommodate the disabled.

3h. Signage should be used to enhance the public's appreciation for the coast. Signs should be erected where appropriate, to direct visitors to public facilities and beach access points along the waterfront. In addition, Cape Cod has a wealth of maritime history, including captain's houses, historic sites, and fisheries-related activities. These should be acknowledged through appropriate signage or display.

3i. Relocate existing waterfront parking lots. If they are damaged during a storm, the maintenance, repair, and cleanup of these lots can involve significant costs to the community. One method of preventing such damage and cost includes moving the parking lot away from the coast to avoid direct storm attack and erosion. If this is not feasible, parking lots should be made of gravel or crushed shell because asphalt can break up during a storm and scatter along a beach. If there is a beachfront parking lot that cannot be relocated, the beach berm and dune should be maintained with beach grass and snow fence to trap windblown sand and stabilize the dune. Fencing and signage can also be used to direct pedestrians away from the fragile dune.

3j. Maintain water dependent uses. Docking and unloading facilities for commercial fishermen, marinas for public and private vessel use, ferry terminals, and areas for charterboats and whalewatching are all water-dependent uses that should be maintained. Loss of these waterfront facilities results in a loss of traditional economic activity in the community. Maintenance of these facilities, coupled with access for the public, such as walkways, observation areas and boat launch facilities generate public interest and activity on the waterfront.

Accessory Structures

3k. Design accessory structures to protect coastal resource areas. Walkways over dunes and banks should be designed to ensure that the landform is not devegetated or destabilized. It is recommended that these structures be designed in sections so that portions can be removed for winter storage to decrease the chances of storm damage. In residential areas,

Commercial fishing facilities along the coastline are an important Cape tradition

boardwalks should be designed for community use to accommodate adjacent homes and minimize disturbance to the dune or bank. Boardwalks over dunes should be elevated. Chemically treated wood should be used with caution where in direct contact with water, since the chemicals can leach into adjacent wetlands and coastal waters.

Provide public access to the coast

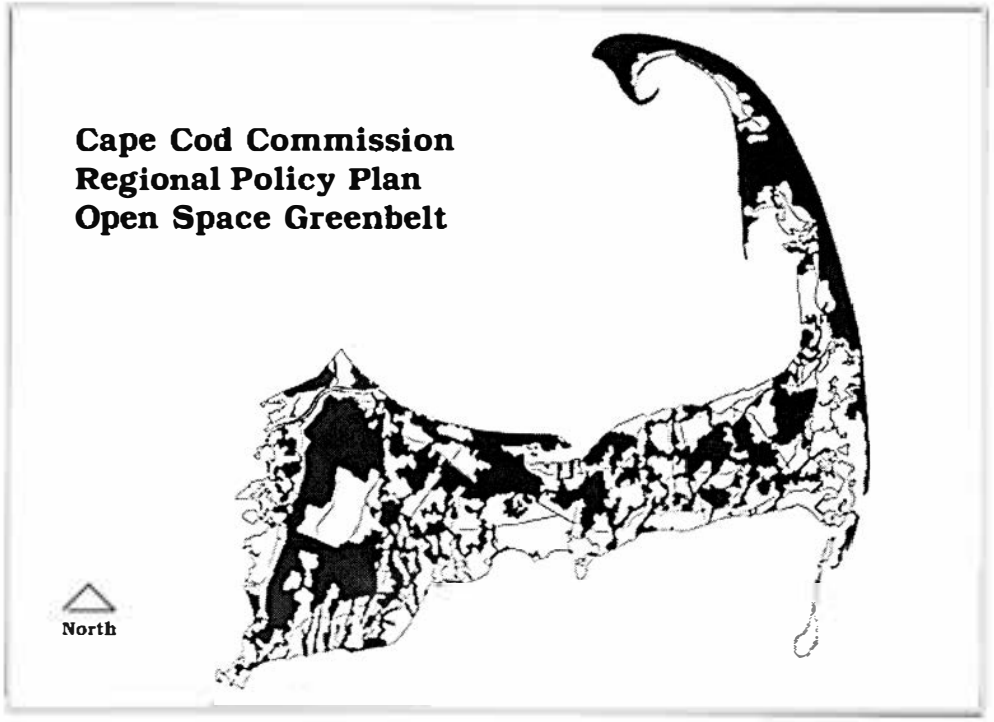
31. Design docks to maintain shellfish habitat and adequate boat access. Shallow water may not be sufficient for boats to manuever, harming shellfish habitat and submerged vegetation from propellers stirring up the bottom. A minimum depth of 4 feet at mean low water should be available at the end of the dock to avoid this problem. Community docks should be encouraged, to reduce the number of individual docks along the waterfront. Proliferation of docks can be aesthetically unpleasing, can cause impacts to coastal resources, and can inhibit public access along the shoreline.

4. Planning Open Space

"Open space" encompasses a wide variety of outdoor areas from small private yards, plazas and courtyards, to ballfields and large conservation areas. Open space helps define the landscape by delineating boundaries or limits of village centers and creating a sense of separation between these village centers.

Although open spaces are generally designed at the site level, it is important to connect open spaces where possible, creating networks of open land. The Regional Policy Plan's Capewide Open Space - Greenbelt Network identifies a swath of interconnected open land from Falmouth to Provincetown that the Cape Cod Commission is seeking to maintain.

Open space protects plant and wildlife habitat and wildlife migration corridors, helps to preserve groundwater recharge areas, maintains scenic views and landscapes, and provides recreational opportu-



Proposed Capewide Greenbelt Network

nities including hiking, fishing, and cross-country skiing. Open space also provides pleasant places for groups to congregate and engage in team sports. The following guidelines are provided to reflect these fundamental purposes of open space:

4a. Plan open space to maintain separations between existing village centers and growth centers. Focus growth within village centers, thereby reducing sprawl and preserving existing undeveloped areas between centers.

4b. Maintain and reinforce open space networks. The Capewide Open Space - Greenbelt Network identifies existing and proposed open space areas to be maintained for conservation and recreation purposes. Wherever feasible, open space should provide connections to this network and maintain its integrity. Open space should also be connected to existing conservation areas to establish large unfragmented areas of open space.

4c. Preserve key views and focal points that are important qualities of the character of the area. These include views to the ocean, coves, harbors, woodlands, buildings, and historic sites. Establish new focal points when siting proposed development. Enhance public access to these open space areas.

4d. Open space should be contiguous within the site. Small isolated pieces of land scattered throughout the site, and narrow strips of open space, are generally less valuable ecologically and are more difficult to manage. Retain natural buffer areas with indigenous plant species. Link open space areas within and adjacent to the site by footpaths or trails.

4e. Design open space to protect the most important attributes of a site. Open space should protect scenic views and roadways, steep slopes, wetlands, shorelines, wildlife migration corridors, trails, significant landforms, agricultural land, and historic and archaeological areas.

4f. Provide a variety of open space types within a development to meet different needs. For example, a residential development might include small private yards, a "common" or community garden, a ballfield, and a large natural area to buffer the development. Consider the size and configuration of open space to be as important as the density and siting of the buildings, because they contribute equally to the overall character of the development. All house lots abutting open space should have reasonable physical and visual access to the open space through internal roads or paths.

4g. Public use of open space areas should be encouraged where such use will not interfere with preservation of important environmental attributes of

Open space areas should be provided adjacent to wetlands such as this cranberry bog

the site. Well defined access points should be provided to open space areas, with parking as appropriate. Open space areas may be appropriate places to educate users about the natural environment.

4h. Provide highly visible public spaces within commercial areas so people can rest, gather, and socialize. Use these spaces for community activities. Encourage pedestrian and bicycle traffic by providing tables, seating, bus shelters, public telephones, trash receptacles, bike racks, drinking fountains, picnic shelters, and public restrooms where appropriate. Include a community message board. Use plantings and public art to enhance these outdoor spaces.

Provide public spaces

4i. Provide spatial definition with compatible materials. Define yards, courts, play areas, greens, commons and other private and public open spaces with walks, plantings, walls, fences, and other elements that are compatible with existing materials and spatial qualities.

4j. Designate a minimum amount of permanent open space to be provided by new commercial and residential developments.

The Regional Policy Plan requires a certain ratio of permanently protected open space to area of development impact. The ratio varies depending on project context, but is highest in Natural Areas and Rural Development Areas.

Spatial definition created by fences

Wetlands do not count toward this percentage. Preserve these environmentally sensitive areas as permanent conservation open space prior to actual site plan development by requiring setbacks and vegetative buffers of at least 100 feet.

4k. To ensure that open space is maintained in perpetuity, it should be placed under conservation restriction or donated to a town and placed under the care of its conservation commission. Permanently protected open space will provide benefits to residents and the general public, as well as ensure that important environmental resources are preserved.

5. Streetscapes and Roadways

Streetscapes and roadways include natural and built elements found along streets and roads including:

- curbs and edges
- utilities
- street trees
- green areas
- parking areas
- buildings
- signage
- fences, walls and hedgerows
- pedestrian amenities such as benches and trash receptacles
- street lighting

Village streetscapes are found in town centers, residential areas, commercial districts, and other densely developed areas. Rural streetscapes are found in agricultural or very lightly developed areas. Village streetscapes consist of a well established street edge defined by a complex of

building facades, mature street trees, sidewalks, fences, hedges, and other formal landscaping elements. Rural streetscapes are equally well defined by the forest or meadow edge and typically narrow pavement. The sense of enclosure along wooded roads is strong even when the surrounding trees are not very tall. This enclosure creates a dramatic contrast to open areas that often frame beautiful views. The well defined junction of rural and village streetscapes often serves as a gateway, heightening the experience of entry into a commercial district or other more developed area.

Activities such as construction of new roadways and road widening should be undertaken only when less intrusive measures are inadequate. If structural solutions are unavoidable, new roadway design should be in keeping with the existing character of the roadway and the needs of bicyclists, pedestrians and other users should be considered. Before adopting local road standards, consult with a professional engineer to ensure compliance with all applicable engineering standards and state laws.

The following guidelines describe how to preserve and enhance both village and rural streetscapes:

5a. Reflect the form of the land in new road layouts to minimize environmental and visual impact to the landscape. Generally follow existing contours so that roads integrate into the landforms with a minimum of cutting and filling.

5b. Design roadways that are scaled to reflect the intensity of use. Consider roadway specifications that are tailored to the expected type and intensity of use. For example, subdivision roads that serve only a few homes need not be as wide as a town road serving hundreds of vehicles per day. Appropriate road design should reflect the needs of automobiles, emergency vehicles, trucks, bicycles and pedestrians. To design specifically for the largest of vehicles results in overdesign for the majority of the street's users. The design concepts discussed below are potential alternatives for low density residential streets. Alternative designs must be carefully planned, and implemented only when practical and where they do not compromise the safety of any mode (vehicular, pedestrian or bicycle) of transportation.

- Use pavement widths between 20 and 22 feet (10'-11' lanes) depending on the projected volume. For example, where lots are larger than one acre and parking will be provided on the lot, road widths need not be larger than 20' unless the road serves over 500 vehicles per average day;
- Cul-de-sac radii may be as little as 30' (paved area) with a 40' right-of-way radius or may be made into a one-way loop with an island. Curbing should be avoided, but if it is necessary, consider using mountable curbs;

Preserve the wooded road edge

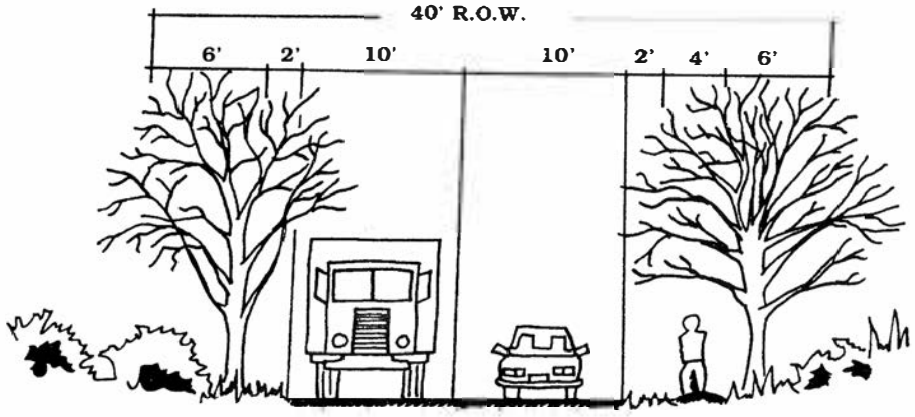
- Grading and clearing should be minimized. Usually between four and ten feet of grading and clearing is adequate, depending on roadway design;
- Avoid vertical curbing where possible. It can create a hazard for bicyclists, creates an urban style environment and is often less desirable than natural drainage. Where sidewalks are necessary, every effort should be made to separate them from the roadway by a two foot minimum grass strip. This provides safe separation and easier maintenance;
- Consider alternatives to mixed asphalt where appropriate. For example, grading and gravel on low volume subdivision roads may be acceptable;
- Consider reducing curb radii at intersections to slow down automobile traffic and provide pedestrians with shorter crossing distances.

5c. Preserve the feeling of enclosure that wooded roadways provide by retaining or replanting wooded road edges. Leave a buffer of natural vegetation between new development and the road edge where possible, to preserve the character of scenic wooded roadways. When replanting along the road edge, leave an appropriate distance between the edge of the pavement and any new trees.

5d. Maintain the existing road width, material and layout when improving streetscapes. Road improvements often result in road widening with a singular focus on meeting the needs of the automobile. In historic village settings, where older structures dominate the streetscape and are often sited close to the road, improvements should maintain the familiar street corridor. Efforts should be made to address traffic flow and enhance pedestrian and bicycle movement through means other than structural improvements. Where no other alternative exists outside of historic villages, consider widening roads to accommodate bicycles where feasible, without damaging historic or natural character. "Traffic calming" strategies, which attempt to slow automobiles in areas of high pedestrian activity, may be provided by adding traffic islands, signage and surface texture changes where warranted. Scenic roadway designation should be considered to prevent removal of stone walls and significant trees, and aesthetic alternatives to steel guardrails should be pursued.

5e. Site new buildings to reinforce the existing building setbacks which help to define the streetscape edge. Continuity of this edge maintains the character of the roadway and allows individual buildings to be enjoyed within a harmonious street composition. If new construction is to be placed farther back than existing structures, vegetation should be planted to continue the established street edge.

5f. Line streets with trees and shrubs to define the street edge, provide shade, and contribute to a comforting sense of enclosure. Provide street trees where space supports healthy growth. Select species, spacing, and location of street trees to maximize survival and define the street edge attractively. Deciduous street



Alternative Road Standard: Two 10' travel lanes (adequate for many residential streets), 2' grass shoulders on either side, a 4' cleared area for utilities or a foot path on the right. Trees are left within the right-of-way.

trees shade buildings, pedestrians and cars during hot months and evergreens serve as wind buffers during cold winter months. Trees provide color, texture and fragrance, and visually strengthen the street edge. Establish a tree maintenance and replanting program with assistance from the local tree warden. Where appropriate, establish planting strips, road islands and small parks within the public right-of-way. Healthy, mature street trees create a positive community image.

5g. Provide sidewalks along village roadways, footpaths along rural roadways, and bicycle ways linking village centers and other developed areas. Provide smooth and durable surfaces. Sidewalks constructed of brick or concrete pavers, for example, are attractive alternatives to asphalt and distinguish pedestrian ways from roads and parking areas. Construct and repair sidewalks with materials similar to the existing materials. In rural areas, stone dust walkways may provide a practical alternative to pavement and would still allow wheelchair and stroller use. In all cases, Americans with Disabilities Act (ADA) requirements should be adhered to (see Accessibility section). The addition of bicycle lanes should be encouraged where appropriate.

5h. Bury utilities underground except where the presence of natural features such as wetlands or archaeological sites prevent such placement. Screen or place transformer units below grade whenever possible. Overhead utility lines create visual clutter and detract from the appearance of village centers and scenic roadways. Although the burial of existing utility lines is expensive, efforts should be made to do so when road improvements are planned.

5i. Minimize pollution from road runoff near water or wetland areas and prevent adverse effects on water quality. Where roads near the shore are in need of repair, consider using pervious materials such as shells or gravel and vegetated swales for road runoff, to lessen the impact on sensitive coastal resources.

5j. Provide traffic signage within the streetscape that is clear, directional, simple, and unrepetitive. Signage systems should be responsive to the speed, location, and function of the roadway. While directional and locational signs are important, the number and placement of such signs should be worked out cooperatively between federal guidelines and local officials in a way that serves the community without unnecessarily increasing visual clutter.

Visual clutter caused by overhead utilities

Provide comfortable site furnishings

5k. Provide site furnishings that are comfortable, consistent with the character of the area, reflect local craftsmanship, and are located where needed. Include trellises, flowerboxes, arbors, and banners along streets. Provide functional seating and gathering areas for people that are pleasant places in and of themselves. Have village merchants help determine

locations for benches. Elevate community awareness by having residents donate benches in honor of local personalities.

51. Locate trash disposal and recycling containers in central locations to avoid multiple dumpsters and trash cans. Visually screen these areas from roads and adjacent residential areas with landscaping or other materials that are harmonious with surrounding buildings.

6. Architecture

The Cape has always been a region of vernacular architecture - architecture which reveals an area's unique local traditions and characteristics. Cape Cod's buildings reflect the economic and social development of the region and they express this development primarily through traditional forms and materials.

Cape Cod's earliest architecture took the form of simple wood structures based on English styles and was oriented toward the region's agricultural focus. By the 18th century, a new form had evolved to meet the early settlers' needs and protect them from the harsh environment. This form has become known as the "Cape Cod House" and its simplicity and weathered shingle or clapboard exterior define the basis of vernacular architecture in this region.

The growth of maritime industries in the early 19th century introduced architectural diversity to the Cape. The region's new wealth was reflected in larger homes designed in Greek Revival and other NeoClassical styles and in the expansion and alteration of many existing buildings. Though the new structures were generally larger, they reinforced the local building traditions by maintaining the simplicity of the earlier forms and continuing the use of local materials.

The late 19th and early 20th century saw construction of a variety of Victorian styles, built primarily to accommodate Cape Cod's growth as a resort area. Although these structures incorporated new forms, their general scale and wooden construction were compatible with the region's traditions. Throughout the Cape, small shingled structures continued to be built in simple forms reminiscent of earlier styles.

The Cape continues to bear development pressures resulting from summer and year round population growth. Many of the sprawling residential subdivisions of the 1960's and 1970's are lacking this distinctive Cape character. In order to prevent

A classic cape

Gothic Revival

Greek Revival

Second Empire

new development from irrevocably changing the character of Cape Cod, the following traditional principles of this region's unique architectural styles should be recognized and incorporated into its new structures:

- **Scale and Proportion** - the size of one architectural element relative to another or to its surroundings. Cape buildings appear small because they are built to human scale and were expanded incrementally. In addition, large structures were generally sheltered by mature trees and nestled into the landscape, making them seem smaller. Nearby structures are built in proportion to one another.

- **Massing** - a building's height, bulk, shape and roof angle. Traditional Cape structures are composed of a primary mass, expanded by later addition of various smaller masses. Large buildings with a single mass are uncommon. Gable and shed roofs are predominant and are usually steeply pitched.

- **Rhythm of openings** - the regular and repeated occurrence of building elements such as windows, entries and porches. Openings on Cape Cod buildings are generally evenly placed across the facade and usually constitute a certain percentage of the surface area. The asymmetrical balance created by the window and door openings on the half Cape and three-quarter Cape are part of the region's charm.

- **Materials** - those materials used on all exterior surfaces, including walls, roofs, and architectural details. Traditional Cape buildings were virtually always constructed of local materials. With some exceptions for municipal or institutional buildings and areas with local brick kilns, weathered shingles and clapboards are the primary form of exterior cladding.

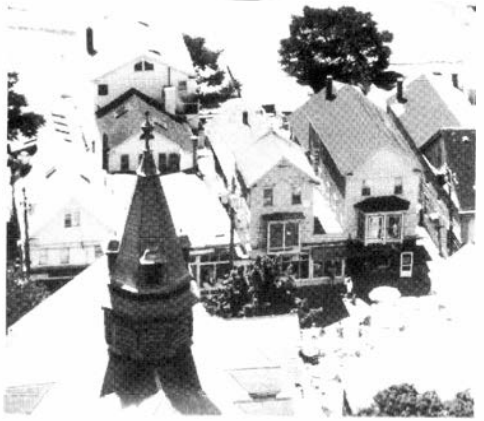
- **Siting** - a structure's orientation on the lot and its relationship to the road and other surrounding elements. Traditional Cape buildings were oriented to the sun and parallel or perpendicular to the road. They often have minimal setbacks, but those with substantial setbacks usually define the road edge with stone walls, fences, or hedges.

Successful contemporary interpretations of these principles combine the traditional patterns of Cape Cod architecture with modern forms. This combination results in the creation of design elements that are both reminiscent of the region's historic buildings and truthful to the modern period in which they were constructed. Most importantly, following these patterns creates buildings that are compatible with their immediate surroundings and that are consistent with the traditional character of Cape Cod.

The following guidelines reinforce Cape Cod's architectural patterns:

6a. Complement surrounding architecture in areas with distinctive architectural styles. Use similar architectural scale, massing and materials to relate new buildings to their surroundings. Reflect the predominant rhythm of the existing buildings in new construction. Select architectural details such as trim, eaves, shutters and other decorative elements that are consistent with the style of the building. Proportion details in scale with other elements of the structure. When developing in areas without distinctive architecture, new buildings should be designed to complement the region's traditional vernacular styles. Modern elements may be designed to achieve an asymmetrical balance which is in keeping with the Cape's traditional architecture.

6b. Harmonize roof pitches and types within a single building or group of buildings. Roofs play a major role in a building's character because they are a dominant visual element. Roof types such as gable, shed, gambrel, and hip are all seen on the Cape, although gable and shed



A harmony of roof pitches and styles

Characteristic massing of simple forms

roofs are most common. The pitch of gabled roofs generally is not more than 12 inches in height for 12 inches in length or less than 7 inches in height for 12 inches in length.

6c. Use small building masses that typify the buildings found in the historic villages and settlements of Cape Cod. Small buildings blend naturally into the hollows and contours of the Cape landscape. Larger buildings should be made up of smaller masses which have strong relationships to one another.

6d. Establish a rhythm of windows, doors, and other design elements that is compatible with surrounding structures. Architectural elements should be arranged in a balanced manner on the facade of the structure, and should maintain the common ratio of openings to surface area. Shutters, if used, should be designed functionally to cover one half the width of the window they surround.

6e. Provide functional accessory structures to enhance and enliven the building and the site. The landscape of the Cape is rich with walls, fences, trellises, arbors, dormers, chimneys, cupolas, spires, porches, terraces, gazebos and

Depth and texture provided by accessory structures

conservatories. These elements reflect a human scale, add richness and texture to the architecture, provide shelter, reinforce the connection between the structure and its surroundings, and enhance the character of the site. Also refer to Landscaping Section.

6f. Use the durable, traditional building materials of Cape Cod. Existing building materials and details reflect the indigenous crafts and artwork of a particular village. Integrate local craftsmanship whenever possible to reinforce this local identity. Use wood shingles and clapboards for most exteriors, and either paint, stain or allow them to weather naturally. Avoid using synthetic surface materials. On municipal and institutional buildings, brick, stone, and stucco are appropriate, but they should be used sparingly on residential and commercial structures. Avoid the use of concrete block as an exterior finish. On sloped roofs, use naturally weathering wood shingles or composition shingles with neutral tones that convey the sense of weathered shingles. Slate and metal roofing that oxidize to a natural patina are also desirable. When adding to or altering existing historic structures, maintain the quality of materials and workmanship found in the original structure.

Use the durable, traditional building materials of Cape Cod

6g. Promote maximum energy efficiency. Orient new buildings and additions to the south for maximum solar gain and consider installing solar heating systems where feasible. Meet or exceed state building code requirements for insulation values to minimize heating and cooling loads. Install and maintain the most efficient heating, ventilation and air conditioning (HVAC) equipment available. Do not oversize HVAC equipment. Use the most energy efficient doors and windows available. Use or retrofit energy efficient lighting, especially in larger commercial or industrial buildings. Shelter entries and use vestibules to minimize heat loss. Use deciduous trees to shade southern and southwestern exposures in the summer. Plant or utilize dense native evergreen species on northerly and northwesterly exposures to break winter winds. These improvements will result in cost savings in the long term.

7. Adaptive Reuse

Over time, the evolution of a community and the changing needs of society may require particular buildings or even whole districts to find new uses. The New England tradition has long been to adapt older buildings to new uses rather than raze them to make way for new construction. Because of this tradition, most Cape Cod villages have retained a large number of their original structures and thus much of their original character.

To avoid unnecessary new construction, conserve energy, and maintain those buildings that are considered architecturally and historically valuable, efforts should be made to find new uses for existing buildings. Given the unprecedented growth recently experienced on Cape Cod, it is essential to preserve and continue the traditional pattern of adaptive reuse if the Cape is to retain its special character.

The most typical examples of adaptive reuse found on the Cape include conversion of village center residences to shops, offices, inns and smaller multiple dwellings. Non-residential structures and outbuildings such as barns and carriage houses have also been converted to homes. Alterations to zoning regulations should be

considered in order to encourage such changes of use in appropriate areas.

7a. Encourage the adaptive reuse of existing buildings to allow diversity of residential, commercial and other uses within village centers. Reusing existing buildings not only maintains those structures which are considered architecturally valuable, but also provides for a broad spectrum of housing types including affordable housing and a viable mix of uses within an expanding community. This diversity facilitates growth while preserving community character and a sense of place.

Residence converted to commercial use with an apartment above

7b. Preserve the character-defining elements of an historic building and its setting when adapting to a new use. Older structures often exhibit architectural styles and a level of craftsmanship that is too expensive to replicate today. They also represent significant periods and events in a community's history which should not be lost to future generations. New users of historic buildings should limit the alterations they make to historic exteriors in order to avoid losing resources that are important to the community. Signage should also be compatible with the historic character of the building. (See Signage section.)

7c. Seek reuses for vacant buildings on commercial strips and in other redevelopable areas. To avoid unnecessary new construction and to conserve energy, efforts should be made to find new uses for structures that have become vacant. Reusing vacant buildings on commercial strips and similar areas provides the potential for successful redevelopment and increased economic benefit. Towns should consider creating incentives for redevelopment and improvement of such buildings. (See Implementation section.)

Greek Revival residence converted to duplex with character defining elements preserved

8. Infill Construction

Infill construction includes new buildings and additions to existing buildings in developed areas. Infill often takes place in historic village settings and along commercial strips. Because of its effect on an area's density, infill is an important component of the growth center concept and should be considered as an alternative to new construction in outlying areas. The capacity for expansion of the existing wastewater infrastructure should always be examined. Infill construction should not be considered in watersheds that are unable to accept additional nitrogen loading or where adequate wastewater treatment is not available.

The visual success of infill construction within an historic setting depends upon how well the new construction relates to the historic village and the visual character that has developed there over time. Efforts should be made to unify diverse village elements in terms of materials, mass, height, proportion and scale. In areas of existing strip commercial development, infill construction should be seen as an opportunity to enhance the character of the area and to reinforce the goals of the growth center concept. Towns may need to amend local bylaws to allow further development on single lots. (Refer to Commercial Strip Redevelopment case study.)

8a. Site and proportion new buildings to reflect the scale, massing, rhythm, materials and siting of adjacent structures if the area has a distinct character. For areas without a distinctive archi-

tectural character, develop infill construction in traditional Cape Cod styles and forms. (See Architecture section.)

8b. Encourage infill construction in areas of existing strip development. Along the strip, new buildings should be constructed on frontage lots in order to define the roadway edge. Developing frontage lots will also screen large existing parking areas and help to make the area more pedestrian friendly.

Infill should reflect proportions, scale and rhythms of adjacent buildings

8c. Encourage backlot development in existing villages. Locate new construction behind existing frontage buildings or vegetation. This preserves the continuity and integrity of the streetscape while accommodating a variety of new residential, commercial, and municipal uses within the village center. Provide view corridors, appropriate signage, and walkways to backlot development to enhance visual, vehicular and pedestrian access.

8d. Encourage construction of outbuildings that could serve as smaller, more affordable residential or commercial units. Historically, large Cape homes had outbuildings or cottages on their lots. Develop this hierarchy in infill buildings by constructing smaller units which could be used for mother-in-law apartments, small seasonal retail shops, or places for cottage industries where appropriate.

8e. Evaluate additional parking needs for infill development. Consider establishment of seasonal bus service, satellite shuttle lots, or reduced parking requirements for mixed-use developments. (See Parking section.)

Compatible addition to historic building

9. Landscaping

Typical Cape Cod vegetation varies from oaks to hollies. Generally, vegetation is smaller in scale because of the sandy soil and exposure to winds. Often villages are separated by wooded areas that add to the "ruralness" of the Cape. Existing vegetation also provides a vertical edge to open spaces, creating varying degrees of enclosure.

Landscaping is an integral component of the character of Cape Cod. There is a close connection between buildings and surrounding vegetation. Cape buildings seem to be nestled into the landscape. Negative reaction to new development is often a response to either hard edges and nakedness caused by inadequate landscaping or excessive clearing of site vegetation. Mature landscapes are either expensive to install or take a long time to grow. Therefore, a good landscape plan begins by working with and minimizing removal of existing vegetation. A landscape plan that addresses both aesthetic and environmental concerns is essential.

The following guidelines respond to traditional landscaping patterns found on Cape Cod:

9a. Preserve the natural landscape. Minimize removal of existing vegetation. Preserve massings of plants in their characteristic natural associations. Transplant and re-use as much on-site vegetation as possible. Maintain or re-create forest floor conditions when retaining, reusing, or replacing forest vegetation.

A portion of a commercial plaza landscape plan, providing attractive places for pedestrians

Restore natural edge conditions to blend the development into the existing landscape. Species characteristic of the region require less maintenance, provide an appropriate habitat for local wildlife, and integrate the new development more successfully into the existing landscape.

9b. Provide adequate natural buffers when designing new development. Commercial buildings should not be constructed directly adjacent to high speed roadways. A minimum 100-foot buffer of natural vegetation is recommended so that views to commercial buildings are completely screened. Where natural vegetation has already been removed, replace it with dense plantings to create a 100-foot buffer. Substantial buffers should be provided for side and rear property boundaries where commercial development abuts residential properties. Where industrial districts exist next to residences, open space in addition to vegetated buffers should serve to separate these incompatible uses.

9c. Include the planting plan as an integral part of site planning. The role landscaping plays in determining the character of new development warrants its early consideration in the site planning process. To ensure long term health and stability of plant materials, continual maintenance including watering should be provided by the landscape contractor or developer for at least two years after construction.

9d. Use plants that are characteristic of the region in natural masses. Masses of three or more appear more natural because they are typically massed in nature. The appropriate choice of plant species ensures survival in sometimes difficult coastal situations. The following plant lists are by no means intended to be exhaustive, and are not exclusively native, but are appropriate to seashore conditions.

Plants that stabilize steep embankments:

Trees

• *Ostrya virginiana*	Hop Hornbeam
• *Prunus serotina*	Black Cherry
• *Quercus rubra*	Red Oak
• *Quercus velutina*	Black Oak

Shrubs

• *Comptonia peregrina*	Sweet Fern
• *Myrica pensylvanica*	Bayberry
• *Prunus maritima*	Beach Plum
• *Rosa rugosa*	Beach Rose
• *Symphoricarpos x chenaulti*	Chenault Coralberry

Groundcovers

• *Ammophila breviligulata*	Beachgrass
• *Arctostaphylos uva-ursi*	Bearberry
• *Hudsonia tomentosa*	Beach Heath
• *Juniperus conferta*	Shore Juniper
• *Lathyrus maritimus*	Beach Pea

Plants that provide good windbreaks or screens:

Trees

• *Abies concolor*	Concolor Fir
• *Acer ginnala*	Amur Maple
• *Acer pseudoplatanus*	Sycamore Maple
• *Carpinus spp.*	Hornbeam
• *x Cupressocyparis leylandii*	Leyland Cypress
• *Ilex opaca*	American Holly
• *Juniperus virginiana*	Red Cedar
• *Ostrya virginiana*	Hop Hornbeam
• *Pinus cembra*	Swiss Stone Pine
• *Pinus koraiensis*	Korean Pine
• *Pseudotsuga menziesii*	Douglas Fir
• *Ptelea trifoliata*	Hoptree
• *Quercus alba*	White Oak
• *Quercus rubra*	Red Oak
• *Quercus velutina*	Black Oak
• *Thuja occidentalis*	Eastern Arborvitae

Shrubs

• *Acanthopanax sieboldianus*	Five-leaf Aralia
• *Amelanchier spp.*	Shadbush
• *Berberis julianae*	Barberry
• *Ilex glabra*	Inkberry
• *Ligustrum amurense*	Amur Privet
• *Prunus maritima*	Beach Plum
• *Spiraea vanhouttei*	Spiraea

Plants for exposed seashore conditions (strong wind/ salt spray):

Trees

• *Acer pseudoplatanus*	Sycamore Maple
• *Juniperus virginiana*	Eastern Red Cedar
• *Malus spp.*	Crabapple
• *Picea spp.*	Spruce
• *Quercus spp.*	Oak

Shrubs

• *Amelanchier canadensis*	Shadbush
• *Aronia arbutifolia*	Red Chokeberry
• *Aronia melanocarpa*	Black Chokeberry
• *Baccharis halimifolia*	Groundsel Bush
• *Comptonia peregrina*	Sweet Fern
• *Cytisus spp.*	Broom
• *Ilex glabra*	Inkberry Holly
• *Juniperus spp.*	Red Cedar. Juniper
• *Ligustrum amurense*	Amur Privet
• *Myrica pensylvanica*	Bayberry
• *Prunus maritima*	Beach Plum
• *Rosa multiflora*	Multiflora Rose
• *Rosa rugosa*	Beach Rose
• *Spiraea bumalda*	Spirea
• *Viburnum dentatum*	Arrow Wood Viburnum

Groundcovers

• *Ammophila breviligulata*	Beachgrass
• *Arclostaphylos uva-ursi*	Bearberry
• *Artemesia spp.*	Wormwood
• *Artemesia stelleriana*	Dusty Miller
• *Calluna vulgaris*	Heather
• *Hedera helix*	English Ivy
• *Hemerocallis spp.*	Daylillies
• *Hudsonia spp.*	False Heather
• *Juniperus conferta*	Shore Juniper

Plants for partially sheltered seashore areas (little or no salt spray):

Trees

• *Acer pseudoplatanus*	Sycamore Maple
• *Betula nigra*	River Birch
• *Fagus spp.*	Beech
• *Malus spp.*	Crabapple
• *Picea spp.*	Spruce
• *Pinus cembra*	Swiss Stone Pine
• *Pinus koraiensis*	Korean Pine
• *Pyrus calleryana*	Calley Pear
• *Quercus spp.*	Oak
• *Syringa reticulata*	Tree Lilac
• *Tilia cordata*	Littleleaf Linden

Shrubs

• *Amelanchier canadensis*	Shadbush
• *Clethra alnifolia*	Sweet Pepperbush
• *Cornus spp.*	Dogwood
• *Erica spp.*	Heath
• *Euonymus alata*	Burning Bush
• *Hydrangea paniculata*	PeeGee Hydrangea
• *Hypericum spp.*	St Johnswort
• *Ilex crenata*	Japanese Holly
• *Kolkwitzia amabilis*	Beauty Bush
• *Potentilla fruticosa*	Bush Cinquefoil
• *Rhus spp.*	Sumac
• *Syringa meyeri 'Palibin'*	Meyer Lilac
• *Syringa microphylla*	Littleleaf Lilac
• *Taxus spp.*	Yew
• *Viburnum spp.*	Viburnum

Plants that attract wildlife:

Trees

• *Juniperus virginiana*	Red Cedar
• *Ilexopaca*	American Holly
• *Kalopanax pictus*	Castor Aralia

Shrubs

• *Amelanchier canadensis*	Shadbush
• *Aronia spp.*	Chokeberry
• *Berberis spp.*	Barberry
• *Buddleia spp.*	Butterfly Bush
• *Crataegus viridis 'Winter King'*	Hawthorn
• *Gaylussacia baccata*	Huckleberry
• *Hamamelis virginiana*	Witch-Hazel
• *Ilex glabra*	Inkberry
• *Ilex verticillata*	Winterberry
• *Myrica pensylvanica*	Bayberry
• *Prunus maritima*	Beach Plum
• *Rhus spp.*	Sumac
• *Rosa spp.*	Rose
• *Vaccinium spp.*	Blueberry
• *Viburnum spp.*	Viburnum

Groundcovers

• *Arctostaphylos uvaursi*	Bearberry
• *Cotoneaster adpresus*	Creeping Cotoneaster

Plants for moist soils:

Trees

• *Acer rubrum*	Red Maple
• *Taxodium distichum*	Baldcypress
• *Tsuga diversifolia*	Northern Japanese Hemlock

Shrubs

• *Amelanchier canadensis*	Shadbush
• *Cephalanthus occidentalis*	Buttonbush
• *Chionanthus virginicus*	White Fringetree
• *Clethra anifolia*	Sweet Pepperbush
• *Ilex verticillata*	Winterberry
• *Itea virginica*	Virginia Sweetspire
• *Rhododendron viscosum*	Swamp Azalea
• *Xanthorhiza simplicissima*	Yellowroot

Grasses

• *Spartina alterniflora*	Marsh Grass
• *Spartina pectinata*	Prairie Cord Grass

Plants suitable for roadside and parking lot conditions:

Trees

• *Acer pseudoplatanus*	Sycamore Maple
• *Acer rubrum*	Red Maple
• *Gingko biloba*	Gingko

• *Ilex pedunculosa*	Longstalk Holly
• *Juniperous virginiana*	Red Cedar
• *Parrotia persica*	Persian Parrotia
• *Picea omorika*	Serbian Spruce
• *Picea orientalis*	Oriental Spruce
• *Quercus spp.*	Oaks
• *Tilia cordata*	Little Leaf Linden
• *Ulmus parvifolia*	Lacebark Elm
• *Zelkova serrata*	Japanese Zelkova

Shrubs

• *Acer campestre*	Hedge Maple
• *Amelanchier canadensis*	Shadbush
• *Buddleia davidii*	Butterfly Bush
• *Cotoneaster spp.*	Cotoneaster
• *Cytisus spp.*	Broom
• *Euonymus alatus*	Burningbush
• *Ilex crenata*	Japanese Holly
• *Ilex glabra*	Inkberry
• *Juniperus spp.*	Juniper
• *Ligustrum spp.*	Privet
• *Myrica pensylvanica*	Bayberry
• *Potentilla fruticosa*	Shrubby Cinquefoil
• *Rosa rugosa*	Beach Rose
• *Spiraea spp.*	Spirea
• *Vaccinium angustifolium*	Lowbush Blueberry
• *Vaccinium corymbosum*	Highbush Blueberry
• *Viburnum spp.*	Viburnum

Groundcovers

• *Ammophila breviligulata*	Beachgrass
• *Artemesia schmidtiana*	Silver Mound
• *Calluna vulgaris*	Heather
• *Comptonia peregrina*	Sweet Fern
• *Erica carnea*	Heath
• *Santolina chamaecyparissus*	Lavender Cotton

Plants that discourage foot traffic:

• *Berberis julianae*	Wintergreen Barberry
• *Hippophae rhamnoides*	Sea Buckthorn
• *Rosa rugosa*	Rugosa Rose

9e. Use a variety of species to assemble new landscaping masses. Create visual depth in plant massings by layering plants of various textures, sizes and colors. Include flowering or fruiting species for color, interest and wildlife habitat where appropriate.

9f. Integrate existing mature trees and vegetation into the landscape plan. Preserve the function of existing vegetation, such as groves of trees that separate land uses or provide a natural backdrop for development.

9g. Use plantings to enhance the relationship of buildings to their surroundings. Layered plantings soften edges and corners and reduce the scale of buildings in the landscape. Masses of trees and vegetation near buildings reduce the perceived scale of buildings and set them into the landscape. Trees should be a minimum of 3 inches in diameter at the time of planting. Consider plant massing along with architectural massing during the design process. Balance the mass, proportion and rhythm of landscape and building elements.

9h. Use low-lying plantings to preserve views of the horizon, especially along the coast. Make use of mat-forming plants or low, rounded shrubs

Use a variety of native plants in natural massings

that can resist wind.

9i. Mitigate high winds with hedges, walls or fences carefully chosen for durability and aesthetic harmony.

9j. Do not plant trees on steep embankments as soil erosion causes instability and uprooting. Instead, use grasses, groundcovers and low shrubs.

Mass plants against buildings to tie them to the landscape

9k. Minimize lawn area, as most lawn grasses require supplemental irrigation and regular applications of fertilizer to stay green. Where lawn is necessary, favor fescues and other drought tolerant species.

10. Alternatives to the Automobile

At numerous public hearings, residents have strongly urged the Commission to discourage wholesale reliance on the automobile and require that developers provide incentives for use of other modes of transportation. A variety of alternatives could serve to meet this goal, such as construction of bicycle and pedestrian paths or provision of shuttle bus service.

10a. Provide accessible sidewalks and paths to link popular areas within the community. Greater pedestrian use helps to decrease automobile use, reducing traffic congestion. Reinforce and encourage the natural development of walkways that connect to different areas and link circulation systems within villages to systems around and between villages. In planning access to historic properties, maintain the character-defining elements of the property. Refer also to Accessibility section below.

10b. Establish bicycle ways to link developed areas. Promote bicycle friendly roadways through signage, education for both drivers and bicyclists, and construction of bicycle lanes where appropriate. Encourage the use of paved road shoulders where other path alternatives do not exist. Within large commercial developments, provide bike paths to surrounding residential neighborhoods. Continue these path systems between communities as an alternative to using cars and roads.

10c. Link open spaces with pedestrian and bicycle circulation networks to provide recreational opportunities such

Provide paths to link areas within a village or development

Provide bicycle paths and footpaths that connect villages and open space

as walking, running and biking. Increase pedestrian and bicycle access to the coast by connecting public beaches to the path system. Connect these paths to bus stops where appropriate.

10d. Provide crosswalks at road crossings, where warranted. Crossings should be clearly marked on the road, preferably with a change of materials. Provide pedestrian phasing at major signalized intersections where warranted.

10e. Provide facilities for alternate modes of transportation including:

- Bus stops and shelters
- Seasonal shuttle buses and trolleys to connect to village centers, beaches, ferry terminals, airports and other significant or frequented areas
- Bicycle racks or storage areas
- Trail signage

11. Accessibility

The Americans with Disabilities Act (ADA) and Massachusetts Architectural Access Board regulations, established in 1990, prohibit discrimination against the disabled in the following areas: employment, state and local government services, public transportation, public accommodations and telecommunications.

The ADA requires in part that all architectural barriers be removed in existing "public accommodations" as of January 26, 1992. The Act also includes measures to provide reasonable access for employees of private, or "commercial" facilities. Some of the methods for achieving accessibility include providing ramps, lifts, elevators, spaces, and furnishings sized to accommodate persons in wheelchairs; audible and visual signalization; and handrails and surface textural changes.

Barrier-free access is most easily and least expensively integrated into the design and construction of new buildings. Careful design and grading of walkways, for example, can make entrances accessible without the need for mechanical lifts. Making existing buildings accessible can be considerably more difficult, however, in some cases requiring substantial structural changes to the building at significant cost to the owner. Before undertaking any barrier removal plan, a needs assessment study should be conducted in order to establish priorities for remediation of existing facilities. Information and assistance on how to fulfill the ADA requirements with the least impact to historic

structures is available from Massachusetts Historical Commission. The following guidelines are intended to assist in improving access for disabled persons of all ages:

11a. Make new and existing public buildings fully accessible to all persons. Building entries should be clearly identified. Combined means of entry should be provided for disabled individuals. For existing buildings, designers and contractors must take great care to preserve the integrity of the original structure, especially if it has historical significance. Ramps, railings, doors, and hardware should be built of materials similar to or complementary to existing materials. These fixtures should also maintain the same quality of craftsmanship as is found in the existing structure.

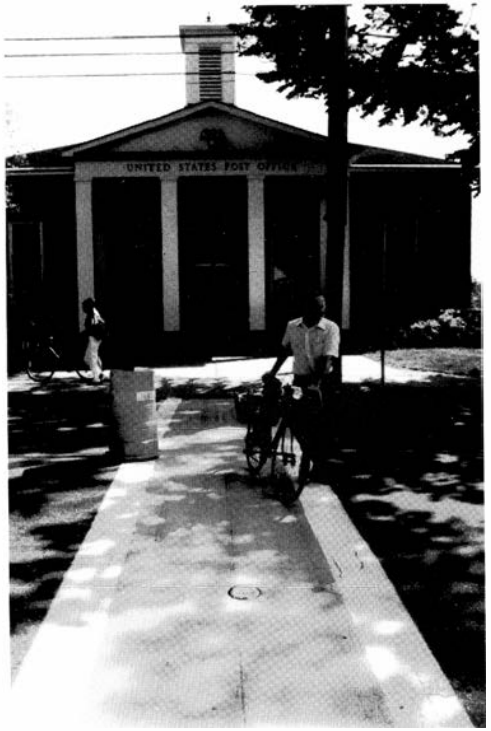
A well designed, accessible entry

11b. Extend accessibility to outdoor environments wherever possible. Make parking lots, walkways, entries, recreation areas and public transportation systems accessible to everyone. The following are recommendations for new construction and retrofit of existing sites:

• Accessible parking spaces and drop-off zones should be located as close as possible to the buildings which they serve, or a maximum of 200 feet. Parking spaces, passenger loading zones, and access aisles should have a maximum slope of 2% in all directions. Limited paved areas can be provided within parking lots made of pervious materials in order to meet accessibility requirements.

• Walkways should provide clear and direct routes throughout sites. Minimize sidewalk grades and pavement jointing to accommodate those in wheelchairs or with visual impairments. Provide audible walk signals and visual or textural clues such as surface material changes at all crosswalks.

• Where outdoor ramps are required, a maximum slope of 1:20 or 5% is recommended, with a slope of 1:12 or 8% allowed by the ADA. The ADA's minimum width requirement for ramps is 4 feet. Appropriately designed handrailings should be provided on both sides, with visual and textural clues provided at the top and bottom of ramps.



Provide pedestrian crosswalks

• Bus stops/shelters and passenger loading zones should be adequately dimensioned to allow room for movement of wheelchairs. Waiting areas should be located within 300 feet of the building entrance. Adequate

seating and lighting should also be provided.

• For safety reasons, stairs should always include two steps, with visual and textural clues provided at the top and bottom. Handrailings should be provided on all stairs and landings. Stair edges should be rounded and treads should be visually distinct from one another. The height between landings should not exceed 5 feet.

• Rest areas should be provided where pedestrians must walk long distances. Benches should be designed to facilitate individuals with limited strength. Armrests and adequate heelspace are important details. A seat wall height of 18-22 inches is recommended for the elderly.

• Adequate lighting for all stairs, ramps, parking and other facilities should be provided. (See Lighting section.)

• Appropriate signage should be provided for all site-related activities. Accessible parking spaces or loading zones should be designated by the International Symbol of Accessibility.

• Accessible recreation area design, including access to beaches and boat ramps, should allow a diversity of experiences. Physical barriers should be minimized and programs developed to meet the needs of disabled persons.

12. Parking

Providing adequate parking is a difficult issue for any new development or existing village center on Cape Cod. Downtown merchants often feel that a shortage of parking discourages shoppers and hurts business. On the other hand, existing strip developments and large scale commercial developments have been designed to accommodate peak summer parking demand, resulting in barren, underutilized and unattractive landscapes nine months of the year.

Long-range planning on both the local and regional levels is essential to solve the problems of parking. While cooperative efforts to create adequate, attractive parking areas that complement the natural and built environment of Cape Cod are needed, efforts to curtail and reduce the use of automobiles should also be pursued. Zoning changes may be required to implement reduced parking requirements.

The following guidelines outline ways to improve the visual qualities, safety, and efficiency of parking areas while reducing seasonal congestion:

12a. Locate parking to the side or rear of buildings or commercial complexes wherever possible. Provide view corridors, informational signage and walkways to provide visibility and access to parking areas.

12b. Design parking lots to accommodate average, not peak, volume to reduce the amount of paved area. The required number of parking spaces should be based on average use over a twelve-month period rather than peak holiday and summer months. Encourage local businesses to provide shuttle service from remote lots during specific peak shopping periods such as the 4th of July and Christmas. For new developments, consider reserving an area for additional parking that will be paved if a need is demonstrated, but which will otherwise remain as open space.

12c. Allow reduced parking requirements for compatible land uses. Permit use of a common parking area for mixed-use developments which have different hours of peak demand, such as a commercial complex and a movie theater. Allow a reduction in the total number of spaces required for these uses, rather than calculating the required parking for each use separately. Explore the use of school and church parking lots for additional parking, particularly during summer months. In addition, consider allowing adjacent town-owned parking lots or on-street parking to be included in meeting local parking requirements.

12d. Limit parking in growth centers and encourage the use of alternate modes of transportation. In designated village or regional growth centers, consider restricting parking to town-owned parking lots, on-street parking, or provide satellite parking facilities with seasonal shuttle buses. Provide bicycle racks and storage facilities in these and other appropriate areas. (Refer to Section 10 Alternatives to the Automobile and Section 5 Streetscapes and Roadways.)

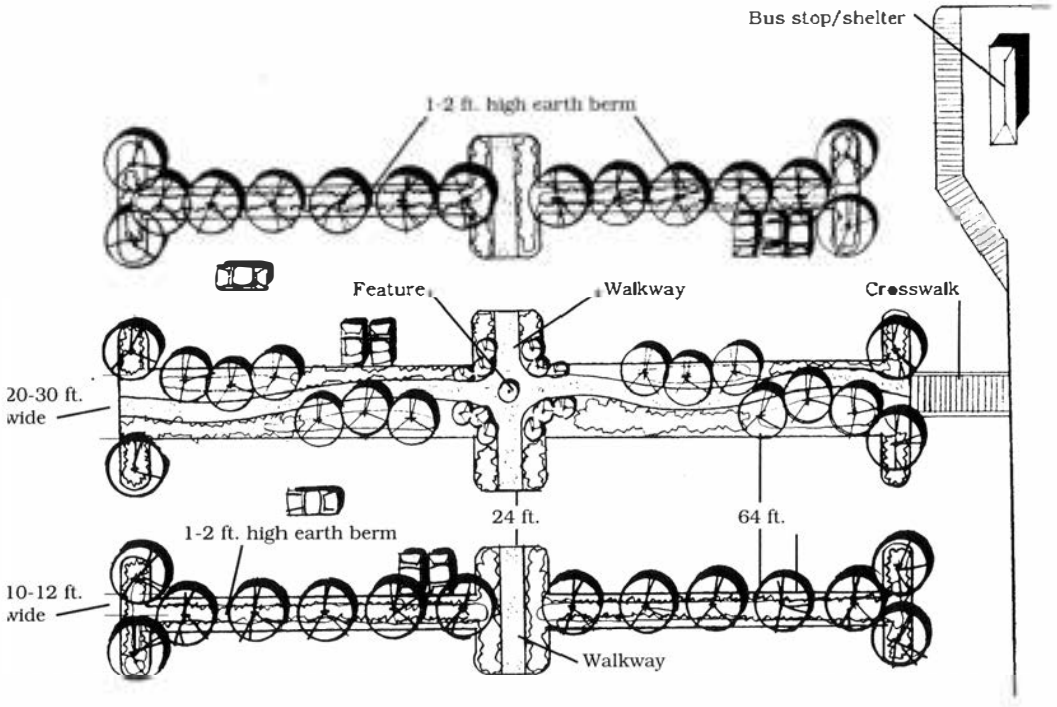
12e. Consider alternate materials, particularly for seasonal parking requirements. Provide unpaved peripheral parking areas to accommodate seasonal parking. Gridblocks with grass, crushed stone or shells are possible solutions which can improve the appearance of parking areas while reducing stormwater runoff. Relocate existing and new beach parking lots away from sensitive shoreline areas, and construct these parking areas using pervious materials to reduce impacts from coastal storms and dynamic shorelines. Where pavement is necessary, establish vegetative buffers to partially treat the runoff as it percolates into the soil.

A small paved area is provided for handicapped spaces. The remainder of the lot is gravel.

Design parking lots as attractive landscapes (Nantucket, MA)

12f. Treat and discharge on site all runoff generated from parking areas. Where soil type allows, treat runoff using vegetated swales and gently sloping naturally vegetated areas. Where storm drains are needed, they should be designed to separate sand and grit from water, and should be engineered to avoid discharge directly into a water body. Regular maintenance should be required to prevent pollution to surface water and groundwater.

12g. Design parking lots as attractive landscapes in their own right. Design smaller parking lots separated by landscaping rather than constructing a single large lot. Use large landscaped islands, at least 10-12 feet wide, with trees planted 25-40 feet apart, depending on the tree species selected. Trees should be a minimum of 3 inches in diameter when planted. Landscaped islands should comprise 20% of the parking field. A pedestrian walk



Recommended parking lot layout

should also be provided for every ten parking spaces to allow for pedestrian safety. Crosswalk pavement should be highlighted either by a change in the pavement texture or color so that pedestrian circulation is clearly defined.

12h. Clearly define the internal circulation system for parking areas, to improve safety and circulation for both pedestrians and drivers. For new development, identify an internal circulation network early in the site planning process. For commercial strip redevelopment, provide additional landscaped islands to better define internal circulation and reduce the number of curb cuts onto the main street. Require internal connections between adjoining developments. Design the circulation system so that queuing does not affect street traffic. For all commercial areas, develop a secondary road or access system behind buildings to facilitate deliveries and reduce traffic pressure on the main street.

12i. Design parking spaces according to the type of land use. For parking areas with high turnover, such as a post office or convenience store, 9 to 10-foot wide parking spaces should be provided. For commuter or employee parking, an 8 to 8.5-foot stall width may be acceptable. Locate short-term and handicapped parking close to the building. Handicapped spaces must be 12 feet wide. Encourage use of car/van-pooling by designating areas for these vehicles close to building entries and reserve some spaces for compact cars.

12j. In areas with heavy year-round parking demand, consider alternatives to on-grade parking. If a multi-level parking facility is necessary, design it to be compatible with traditional Cape Cod architecture

A multi-level parking facility that has been designed to be compatible with surrounding architecture (Northampton, MA)

and to be no higher than the surrounding structures. The design of parking structures can be further enhanced by locating retail stores on the ground floor level or along the entire primary visible facade.

13. Utilities

Utilities include electric, telephone, and cable TV lines, poles and towers, transformers and various forms of mechanical equipment associated with buildings, such as heating and cooling units.

The natural and built skyline of Cape Cod is often broken by the visual clutter of overhead wires. Streetscapes are marred when mature trees are disfigured to clear utility lines. Poles can obstruct traffic sight lines. These problems may be solved by burying utilities. Existing utilities can be placed underground in stages as part of ongoing roadway maintenance and repair. (See Streetscapes and Roadways section.) Roof and ground mounted mechanical equipment can easily be screened by careful placement and use of architectural and landscaping accessories.

13a. Require new development to bury utility lines underground. Where it is not possible to do so, plant trees in locations that do not conflict with pole and wire placement and choose species with open or lower canopies to avoid the need for future thinning.

13b. Where above ground utility lines already exist, towns should consider entering into an agreement with the electric and telephone utilities to plan to progressively remove all overhead poles and wires in town. Under Massachusetts General Laws Chapter 166, Section 22D and 24, such an agreement allows utilities to collect a surcharge from their rate payers of 2% to pay for the work. It is also possible for towns to pass local laws that prohibit utility companies from installing any new poles and wires above ground.

13c. Conceal heating, ventilation, air-conditioning (HVAC) and other mechanical equipment. Place roof mounted equipment behind sloped roofs, parapets, or in the central portion of flat roofs beyond site lines as seen from ground level. Conceal flues and vents in chimneys or cupolas. Screen other utility equipment, loading docks and service areas with vegetation, walls and fences.

14. Outdoor Lighting

Outdoor lighting has a significant impact on the safety, security and visual quality of a development and the community. Driver and pedestrian orientation can be aided by providing a hierarchy of lighting effects that correspond to the different zones and uses of a site. During the day, lighting fixtures are part of the visual character of the site design. At night, if not carefully designed, outdoor lighting can be a major intrusion upon abutting properties and regional vistas.

The current lack of lighting design standards in many Cape communities has often resulted in lighting fixtures that are out of scale with their surroundings, as well as light pollution caused by unshielded and high intensity fixtures. In addition, a person's sense of security at night in outdoor areas is promoted by a uniform distribution of light. High fixture mounting with wide spacing, when placed near trees, often results in disruptions or dark spots in the illumination pattern. Lower mounting heights and closer spacings between fixtures will create a more uniform distribution of light. The following guidelines are recommended to provide lighting that balances safety and energy conservation with fixtures that complement the development and surrounding neighborhood:

14a. Design outdoor lighting to provide a uniform distribution of light without compromising safety and security. Areas of high pedestrian and vehicle use should maintain a minimum footcandle of 1.0, measured four feet above the ground surface at the point of least illumination, and a maximum footcandle of 7.0, measured four feet above the ground surface directly beneath the light source. The intensity of light fixtures should be restricted to 250 watts, with metal halide lamps recommended for parking areas.

14b. The total cutoff of light should occur within the property lines of the parcel to be developed. Parking areas should have light fixtures that have a total cutoff of all light at less than 90 degrees and a beam cutoff of less than 75 degrees. Attached building or wall pack lighting

should be screened by the building's architectural features or contain a 45 degree cutoff shield.

14c. Select lighting and posts that are complementary to the general architectural style of the development and surrounding neighborhood. Lighting manufacturers carry fixtures ranging from contemporary to period styles designed to enhance the visual qualities of the development they serve without significantly adding cost.

14d. Select light poles that are in scale with proposed or surrounding buildings. The maximum light fixture height for properties that are visible from regional roadways, abut residential areas or regional vistas, should be 20 feet. Properties that do not abut residential areas and/or have no regional views should have a maximum light pole height of 25 feet. For pedestrian walkways and plazas, consider using lights in bollards (3 to 4 foot high posts) where appropriate.

14e. Lighting should not conflict with shade trees within landscaped islands. Select lower mounting heights, below the canopy of trees, rather than high mounted fixtures which may create shadows or dark spots. Spacing of light poles in parking areas should be staggered rather than aligned, to maintain a uniform distribution of light. In all cases, light poles should be located within landscaped islands for safety and aesthetic reasons.

14f. Accent unique or special features of the site or building with landscape lighting effects. Uplighting, silhouette or spot lighting, when carefully used, can highlight special objects such as statues, specimen trees or architectural features. When using this type of lighting, care should be taken to prevent glare for drivers or pedestrians.

Lighting that reflects the scale and texture of Cape Cod

15. Signage

Signage is a significant design element, affecting the visual quality and therefore the viability of commercial activity, as well as the directional needs of cars and people. Because they are publicly viewed, signs can either add or detract from the community image. Signs not only enhance and define the architecture, but support the intended function of the business being advertised. The quality of signage, material, color, size, and placement are the owner's personal signature.

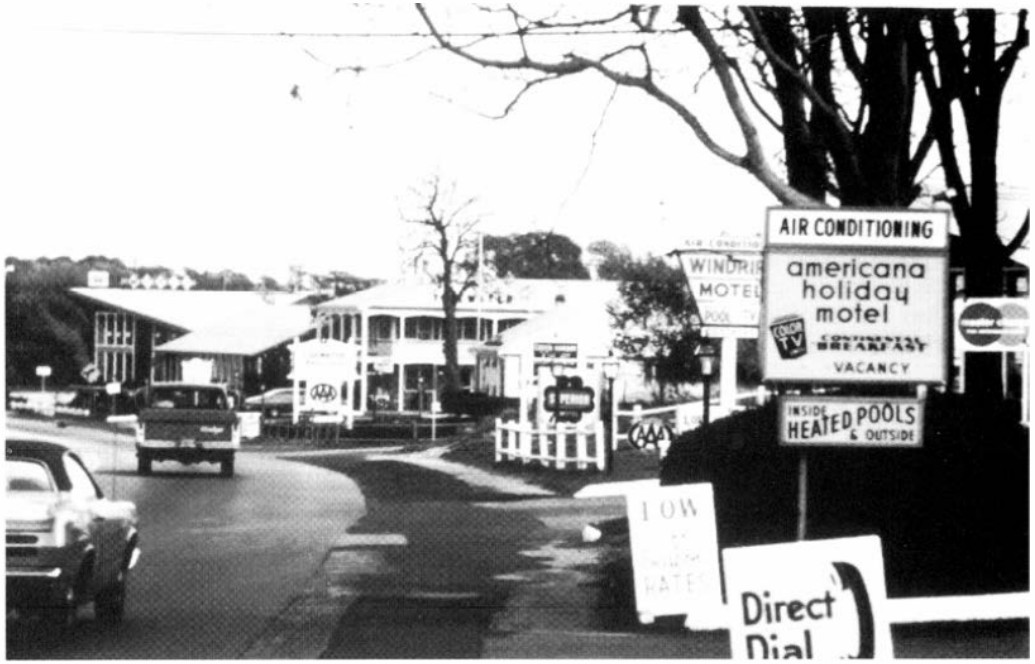
The following guidelines provide some basic considerations for appropriate signage (See also Streetscapes and Roadways, for related guidelines):

15a. Use the smallest size and least number of signs. Most signs are too large, too complex and improperly located. Reduce large signs for individual businesses by grouping signs at the site and building entries. Do not place signs on roofs or above eaves and parapets. A small, simple, well-located sign is likely to be more effective than an improperly located large sign with excessive information.

15b. Place building signs either flush or perpendicular to the building wall. Place wall signs within a sign band that is accentuated by either a change in building material just above the first floor windows, or on the existing lintel (horizontal beam) above the doorway. Signs that project from the building should be placed above the lintel. Excessively large sign bands painted directly on the building facade should be

avoided. A sign mounted on the building or individual letters projected away from the building in the appropriate locations are usually preferable. Lettering may also be back-painted on glass or may appear on awnings. Scale signage to unify and complement the building.

These signs are small, complement the building and are compatible with surrounding materials



Excessive signage causes visual clutter

15c. Sign design should complement the building on which it is placed. Free-standing signs should be placed at eye level for pedestrians and vehicles. Use existing vegetation or landforms under and behind signs. If a sign cannot be placed in one of these situations, use a simple mass of natural plantings as a backdrop.

15d. Commercial strip redevelopment and new development should focus on improving the quality and reducing the quantity of signage in these areas. Where buildings along the strip already have signs that are visible from the major roadway, or where new infill development has been constructed along the road, a secondary free standing sign on the roadway or at the parking lot entrance should not be allowed. When building signs are not visible from the roadway, a group sign for the affected establishments may be placed at the entry to the development or shopping center. If the height, overall size and materials of existing signs along a strip appear excessive or inappropriate, new local regulations may be required.

15e. Sign materials, color, lettering style and shape should be compatible with surrounding building materials, colors and texture. Use carved or painted signs of natural materials such as wood or metal; avoid use of plastics. Include street numbers on all signs to assist in identification for emergency vehicles.

15f. Sign lighting should complement sign design and placement for both night and day effect. External illumination generally produces the most compatible lighting for streetscape environments. External indirect lighting includes neon or incandescent bulbs. Internally lit or flashing signs should not be permitted.

15g. Signs incorporating brand names, symbols or slogans of nationally distributed products should adhere to the same guidelines with respect to scale, placement, proportion, material, lighting and content as signs for local businesses.

CASE STUDIES

1. **Introduction**
2. **Historic Village Centers**
3. **Commercial Strip Redevelopment**
4. **Compact Residential Development**
5. **Large Scale Commercial Development**

1. Introduction

The purpose of the following four case studies is to apply the design guidelines presented in the Design Guidelines section to four particular types of development typically occurring on Cape Cod. For each case study, the existing conditions are described followed by design recommendations tailored to each development type presented. Not all of the design guidelines are represented in each case study. In addition, the case studies are not intended to represent all development types. However, many of the design recommendations can also be applied to other forms of new development not specified below.

Before undertaking any revitalization effort or new development as illustrated below, the infrastructure and natural limitations of the area to be developed should be evaluated. Whenever possible, development should be directed to designated growth centers. Each of the following case studies represents an increase in the intensity of land use. Potential water quality and traffic impacts resulting from increased development, as well as other environmental concerns must be addressed. For example, community septic systems, a centralized small package treatment plant, or, where available, connection to municipal sewer may be necessary in order to accommodate additional development. Stormwater management, nutrient loading to water bodies, and the provision of additional public water will also need to be incorporated into the overall design effort.

Potential traffic impacts will also need to be addressed while recognizing the limitations of existing road right-of-ways. Efforts to reduce dependence on the automobile through measures such as bicycle-friendly streets, shuttle buses, shared parking and improved sidewalks will often be necessary, as well as possible changes in signal timing and progression to help address these potential impacts. Therefore, towns may only be able to implement a portion of the recommendations highlighted below depending on the extent of transportation and other environmental limitations. In addition, towns may choose to implement these recommendations in a different sequence depending on their particular needs and availability of funds.

2. Historic Village Centers

Traditional village center development patterns have produced comfortable, human-scale environments that express a strong sense of place. Village centers also provide physical evidence of the community's history. These development patterns have changed and evolved over time to meet current transportation needs and different economic conditions, often sacrificing important historic resources. As newer commercial strip development and shopping malls have developed along new or improved roadways, many businesses have moved out of the village centers to these locations, leaving vacant and under-utilized buildings.

The following design guidelines have been selected to describe the key components to revitalization of an historic village center. The goal of guiding historic village center development is to enhance and preserve the special character that has evolved over the centuries. However, design guidelines alone do not guarantee appropriate design. Village centers need their own particular zoning to enhance, encourage and preserve the village patterns that support today's communities. Understanding how village patterns have evolved, and working cooperatively with an informed community, will ensure that future growth and development of historic village centers will enhance and not detract from their historic character.

Existing Conditions

The adjacent plan shows a typical historic village center. The following are some of the major concerns related to its existing condition:

Open Spaces. Open spaces in village centers have been traditionally oriented toward pedestrian use and social interaction. The town common has been badly neglected and under-utilized. Although the waterfront is within walking distance of the village center, inadequate facilities discourage its use as a recreational amenity for the community. Many street trees planted at the turn of the century have died and have not been replaced. A lack of bicycle and walking paths discourages residents in outlying areas from using alternate modes of transportation.

Under-utilized and Vacant Lots or Structures. As newer commercial strip development and shopping malls have developed along new or improved roadways outside of

Typical historic village settlement pattern

the village center, many businesses have moved to these locations, leaving vacant land, vacant or under-utilized buildings and poorly defined parking lots.

Visual Clutter. Excessive signage and overhead utility lines clutter downtown areas and detract from attractive historic building facades. Poor street lighting discourages evening use.

Revitalization Efforts

The following steps are suggested in order to revitalize the existing village center in ways that are compatible with its historic character while accommodating future growth:

Adapt Existing Vacant Structures for New Uses Rather Than Replacing Them, Wherever Possible. Some residential buildings are converted to commercial or professional office uses. In addition, some backlot buildings are converted to small seasonal retail shops, places for cottage industries or mother-in-law apartments, creating affordable housing where possible. Converted buildings are made accessible to the disabled. Extensive facade improvements are made to existing structures consistent with the historic flavor of the surrounding neighborhood. Additional parking is provided to the rear of these buildings in an improved town parking lot. Local bylaws may need to be changed to allow the redevelopment of backlot structures and permit the wide variety of activities traditionally a part of a vigorous community center.

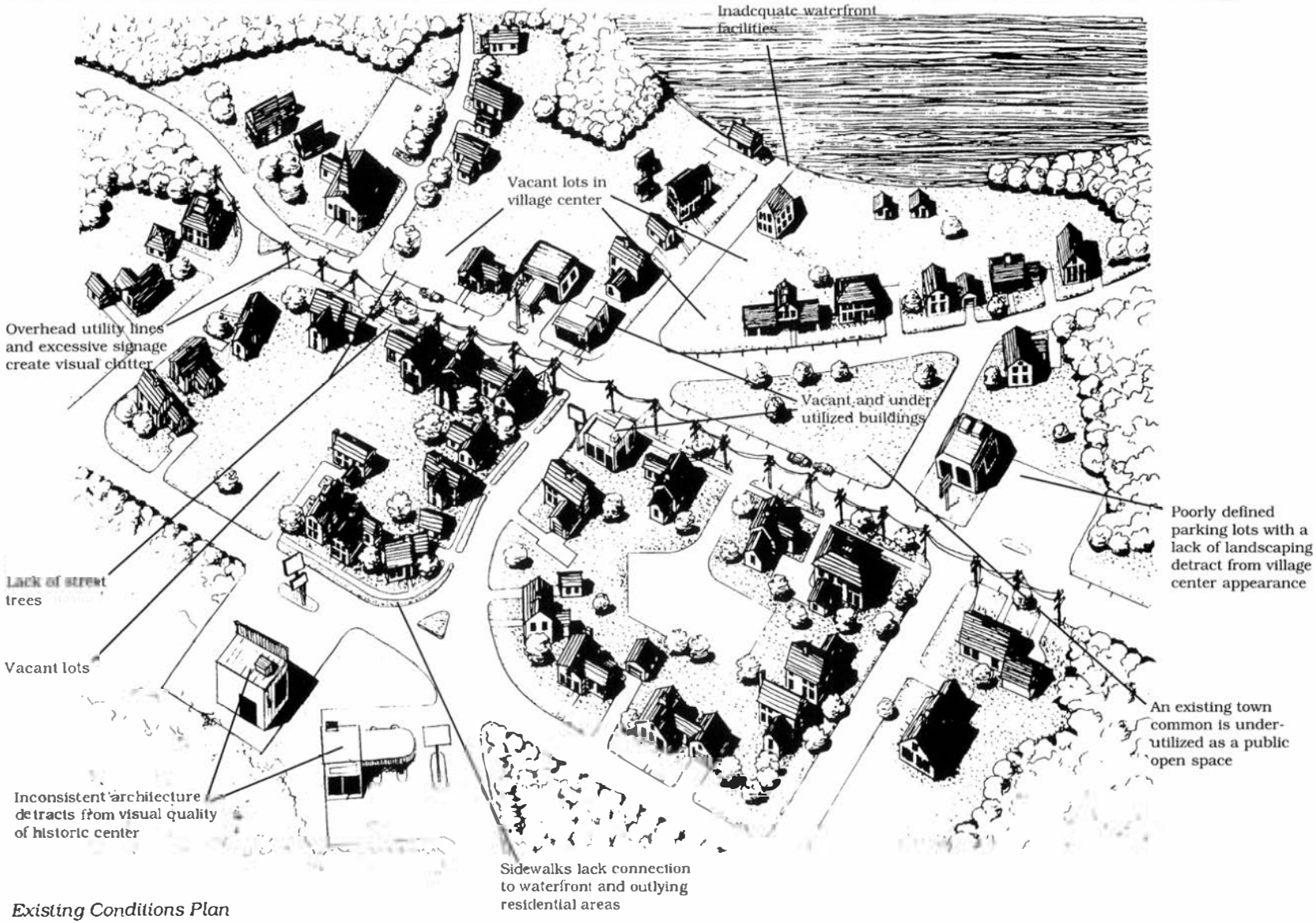
Accommodate Infill Development Where Appropriate. Commercial infill development is constructed on a visually prominent corner in the village center. This new building is sited to respect the existing mass, scale, materials and setbacks of existing buildings along the street. In addition, a new multi-family or elderly housing development is located adjacent to village center activities and services. New backlot infill development utilizes vacant lots and areas behind buildings for additional retail or service uses. When constructing infill development or adapting existing structures as noted above, new architectural styles should be compatible with the traditional character of the village.

Provide Adequate Parking. A land use/ownership assessment (as part of a comprehensive planning and design effort) is completed to assess parking needs. An existing town parking lot is redesigned to provide additional parking for infill and adaptive reuse developments. Parking for waterfront uses is developed within walking distance of the water. A shuttle bus stop is also provided on the common and directly across the street. Shared parking is allowed at locations such as the church parking lot to help alleviate parking demand and limit pavement.

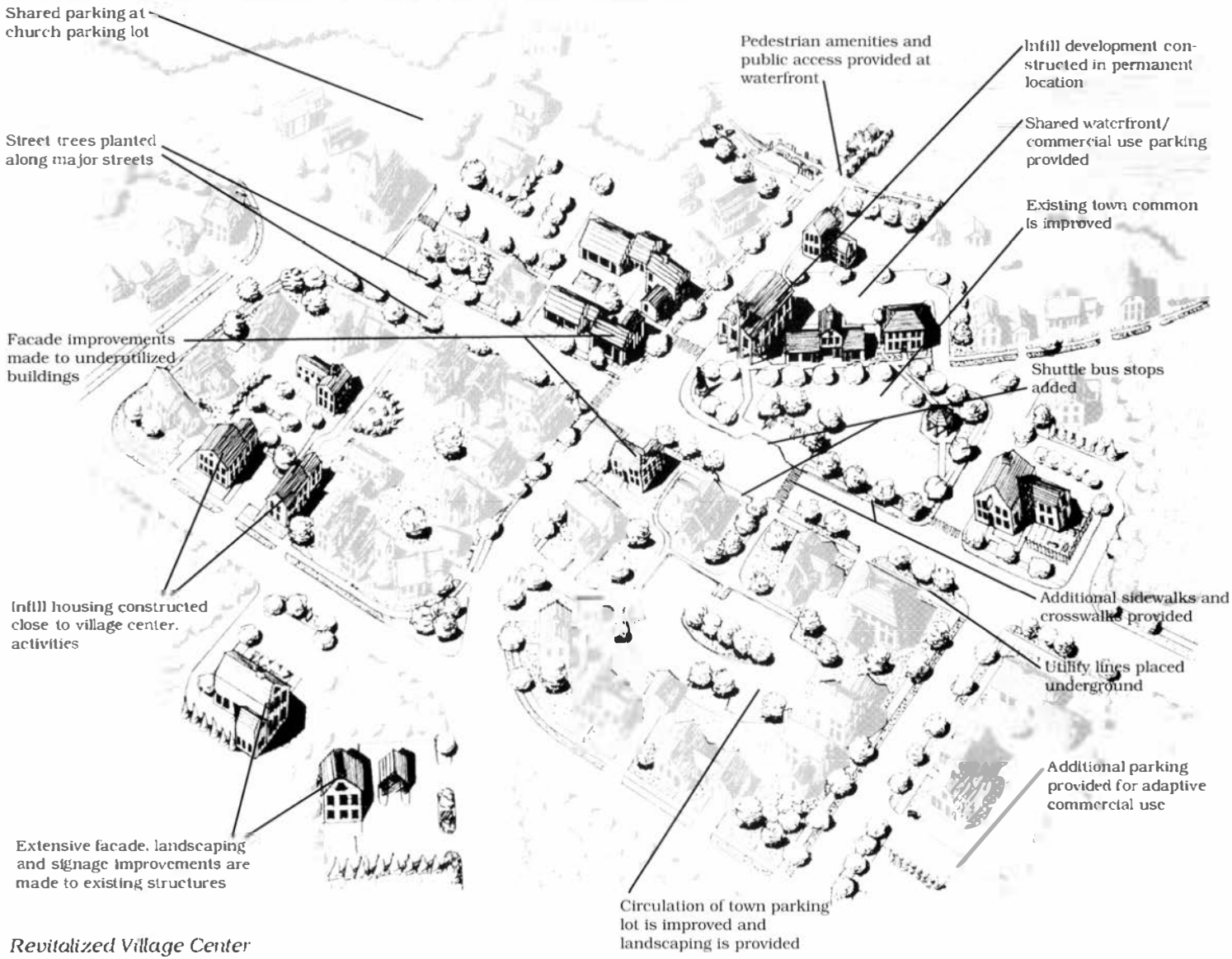
Improve the Town Common. Plant shade trees and install benches and a gazebo. The common serves as a focus for community activities and provides a pleasant place for people to rest or socialize.

Plant Additional Street Trees and Flowers Along the Major Roadways. Attractive streetscapes are critical to village centers

A town common surrounded by civic buildings is often the focal point of the community



Existing Conditions Plan



Revitalized Village Center

and encourage people to walk in the downtown area. Add crosswalks to improve pedestrian circulation.

Improve Existing Sidewalks and Encourage Bicycle-Friendly Streets Throughout the Village. Connect to existing bicycle paths outside of the village where possible. Extend sidewalks to the harbor as well as to adjacent residential areas. Landscaping reinforces the pedestrian network and defines spaces for public use.

Improve Public Access to the Waterfront. Facilities for boat tie-ups are provided, along with bike racks, a boardwalk and benches. These relatively inexpensive additions along with sufficient parking nearby encourage public access to the nearby waterfront. Signs explaining cultural, historic and natural resource features enhance the waterfront visit.

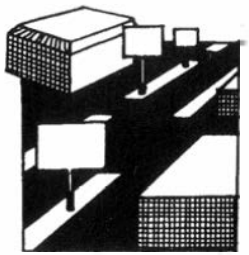
Place Overhead Utility Wires Underground in Phases as Infrastructure is Replaced or Repaired. The removal of these unattractive features can have a significant visual impact on historic village centers.

Replace Existing Street Lighting Fixtures. Substitute existing lighting in phases with fixtures that are compatible with architectural styles in the village. Pedestrian scale lighting is provided along the common and waterfront areas to enhance these public facilities. All lights are installed at a height that provides for pedestrian and vehicular safety, but are not glaring or obtrusive.

Develop New Sign Regulations. New village center signage is constructed in proportion and scale to the facade, with traditional materials, complimentary colors and locations used to unify the village center. Existing non-conforming signage is also replaced over time to meet the above criteria.

3. Commercial Strip Redevelopment

Commercial strip developments have become a prominent feature in many areas of Cape Cod today. This type of commercial development typically consists of several businesses combined into one long, horizontal building along a major roadway, usually under single ownership, or a series of buildings, each with a separate parking lot. Strip development is also characterized by significant areas for parking, a lack of landscaping, and large signs visible from the roadway. National franchises now occupy many strips, bringing with them standardized buildings and a corporate image that is often inconsistent with the character of Cape Cod.



This case study proposes ways for a community to make changes in their strip developments and transform them from non-descript commercial areas to viable centers that reflect the character of the region.

Due to the complex nature of redevelopment in existing commercial strip areas, the case study is divided into four phases of a master plan for redevelopment. The first of these phases identifies the groundwork necessary for a community to put into place so that physical changes can occur. Towns may wish to consider all or part of this phased approach depending on the availability of infrastructure and existing environmental constraints.

Existing Conditions

The following plan shows a typical commercial strip. Nondescript one-story buildings sit back from the major street with parking in front and little landscaping to soften the large expanses of asphalt. The following are some of the major concerns related to existing strip development:

Curb Cut Conflicts. Numerous curb cuts present conflicts between through-traffic and shoppers pulling into and out of the parking lots. There is no coordinated access among the various lots as each store has one or more private curb cut(s). Chain link fencing along side property lines also restricts pedestrian and vehicular access between properties. Development patterns of the strip conflict with traditional patterns of an adjacent village center fragment. New construction, under current

Local bylaws reinforce this strip development pattern

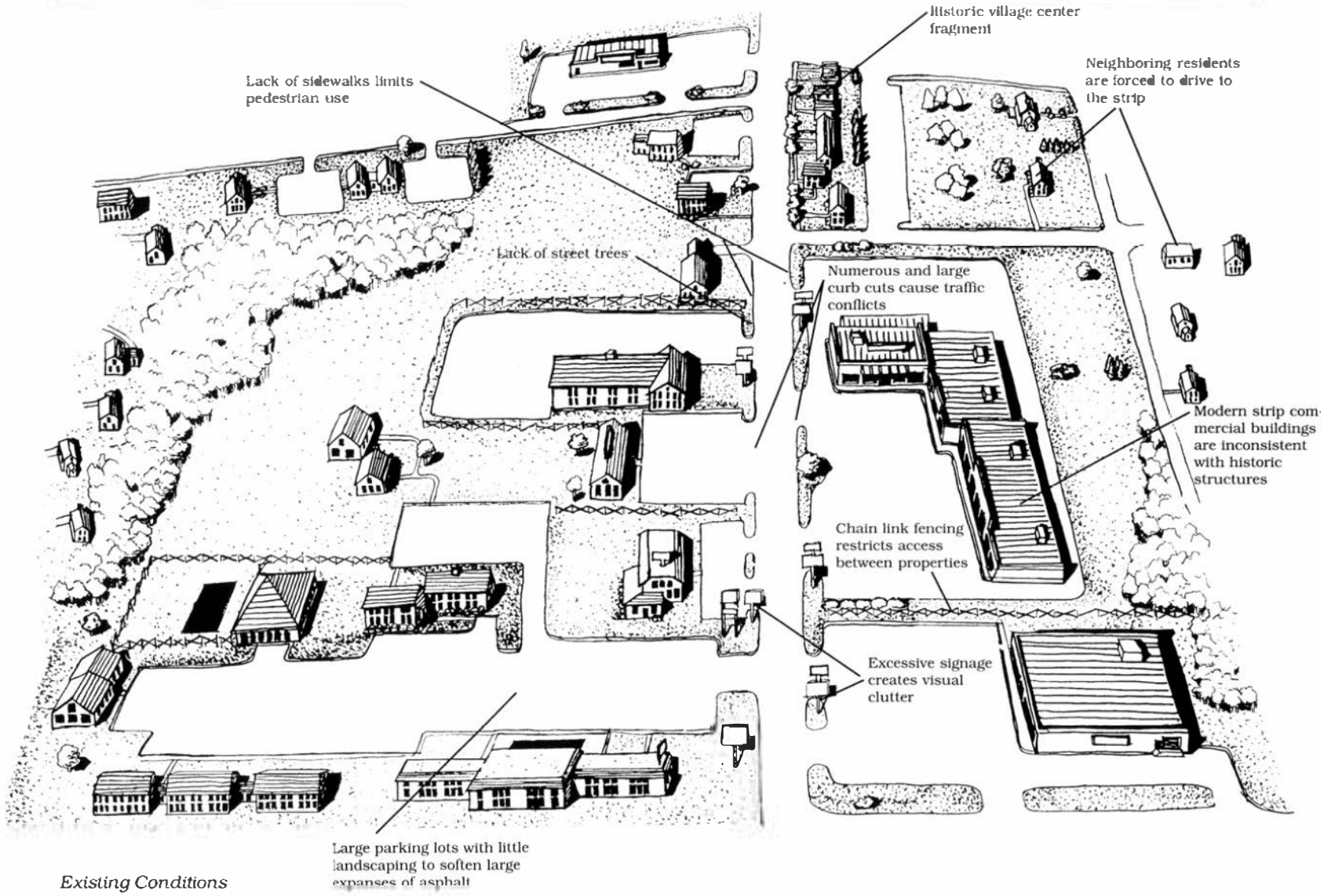
zoning, and without a master plan, would continue the strip pattern and further undermine what remains of the old village center.

Lack of Consistent Architecture. The architecture of the old village center is typical of vernacular Cape Cod styles. However, there is no consistency between the village center fragment and more contemporary structures adjacent to it. In this example, a number of newer motels line one side of the major street. Other buildings include a cinema and numerous restaurants. Several vacant and deteriorated structures also blight the area.

Residential Isolation. Surrounding residential areas are totally cut off from the commercial strip development. Pedestrian or bicycle access to the strip is difficult if not impossible. Neighboring residents are discouraged from walking to the strip due to a lack of pedestrian paths or sidewalks.

Visual Clutter. Although not illustrated on this plan due to the scale of the drawing, overhead utility lines clutter the commercial strip. Internally lit signage is excessive and distracting.

Architectural styles on the strip are often inconsistent with traditional Cape forms. In some locations, vacant buildings blight the area.



Existing Conditions

Phase I: Groundwork

1. **Create a Master Plan for the Area** based on input from business people, residents, and surrounding neighbors. The master plan can include designation of growth or activity centers, and identification of appropriate locations for improvements such as trees, walks, parking and circulation, and placement of utilities underground. The master plan should also consider how to adequately address issues such as additional traffic, wastewater and drinking water demand.

2. **Designate the Area as a Growth Center Through the Local Comprehensive Plan Process.** Make a commitment to guiding growth to areas that can accommodate additional development. In this case study, the commercial strip is not located within a Wellhead Protection Area for public water supply wells.

3. **Amend Local Zoning** and provide incentives to property owners for mixing uses, combining lots, adding pedestrian amenities, or any other activity that furthers realization of the master plan. In order to discourage further strip development, revise zoning to increase the depth of the commercial zone and/or to segment the zone with areas of less intensive land use where appropriate. Adopt architectural standards to reflect the character of the adjacent village center. Identify key parcels for potential civic or institutional uses. (Refer to Making It Happen section for additional information.)

4. **Form a Commercial Area or Main Street Association** to evaluate business needs in the area. Hire a commercial area association manager or solicit volunteers to oversee implementation of the master plan and to maintain a cooperative spirit among merchants. Identify national Main Street organizations or business improvement district committees that can give advice and lend support.

5. **Develop a Shuttle Bus System** to serve the expected future growth of the center. Begin work with the Cape Cod Regional Transit Authority or other local entity early in the redevelopment process.

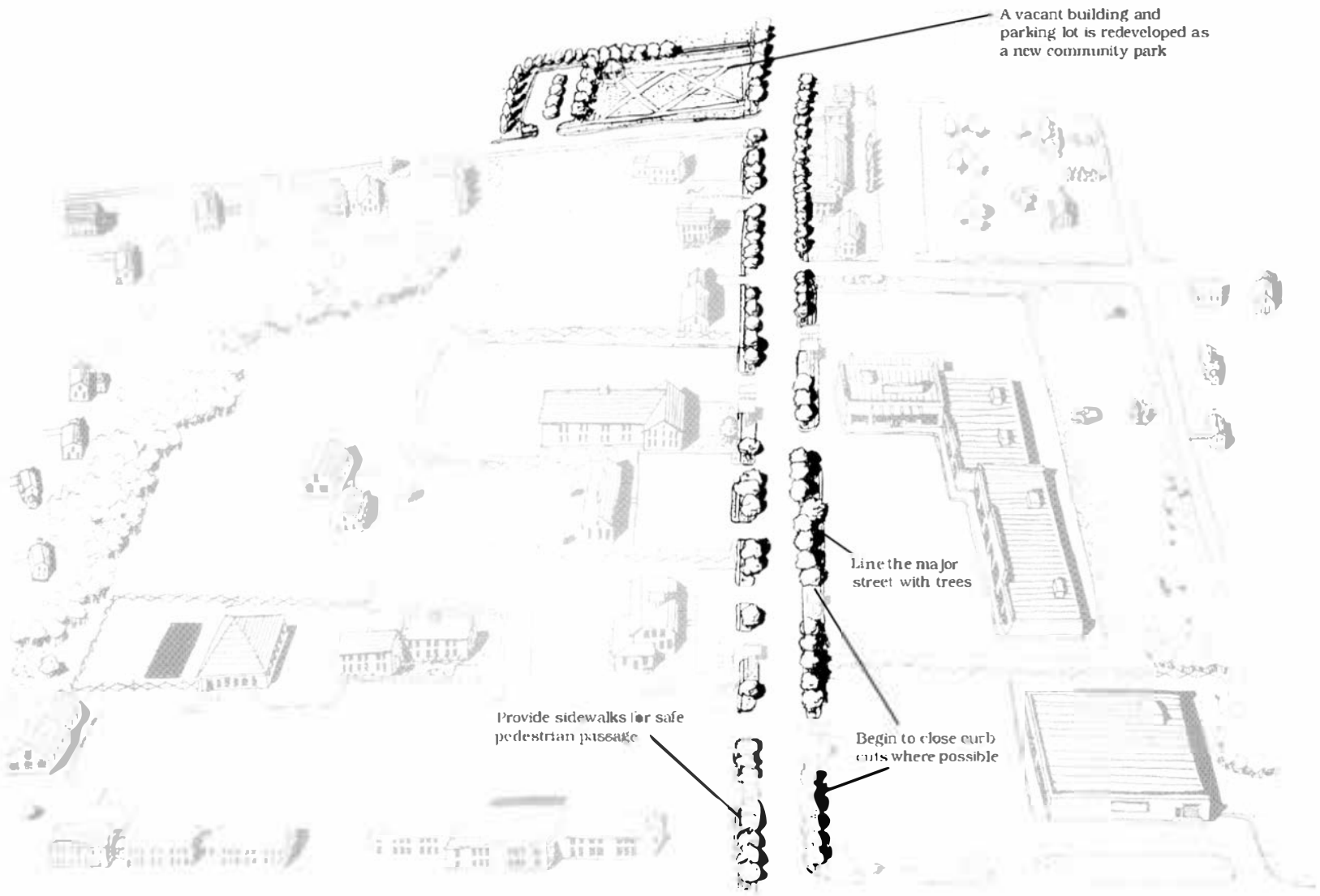
Phase II: Green Intervention

Upon completion of the groundwork, the following steps begin the redevelopment process:

Install Sidewalks. Several curb cuts are consolidated and a continuous sidewalk system is established along the street. Sidewalk areas, including a planting strip, are 10 - 12 feet wide where the right-of-way permits. Pedestrians will still have to negotiate the remaining curb cuts, but a continuous and well defined walkway will encourage pedestrian use.

Line the Major Street with Trees. This simple and immediate step is relatively inexpensive and begins creating a pleasant streetscape. Although several curb cuts remain and buildings are frequently set back from the street, planting street trees creates a sense of enclosure that will make the strip more inviting to pedestrians. Trees should be planted at a sufficient distance from the roadway to protect them from root damage and from interference with existing overhead utility lines.

Provide Open Space. A vacant building with a large parking lot which has been determined not to have potential for reuse is purchased or acquired by the town, demolished and redeveloped as a new pocket park. Street trees are planted within a park-like setting created by providing benches or other amenities. Parking for the park is constructed using pervious materials, while providing handicapped spaces, and is attractively landscaped.



Phase II: Green Intervention

Phase III: Backlot Development

The following activities represent major construction efforts in realization of the master plan:

Establish a Civic Presence. A municipal or civic use is constructed in the location that has been identified as suitable for this purpose in the master planning process. Building design is consistent with the master plan and reflects the architectural principles put forth in this manual. A green open space is provided in front of the building.

Encourage the construction of civic buildings like this one in Mashpee Commons

Rehabilitate an Existing Vacant Residential Building. Encourage private developers to renovate the building in keeping with its historic character. A compatible addition to the rear of the structure is built to accommodate the space needs of the new commercial use.

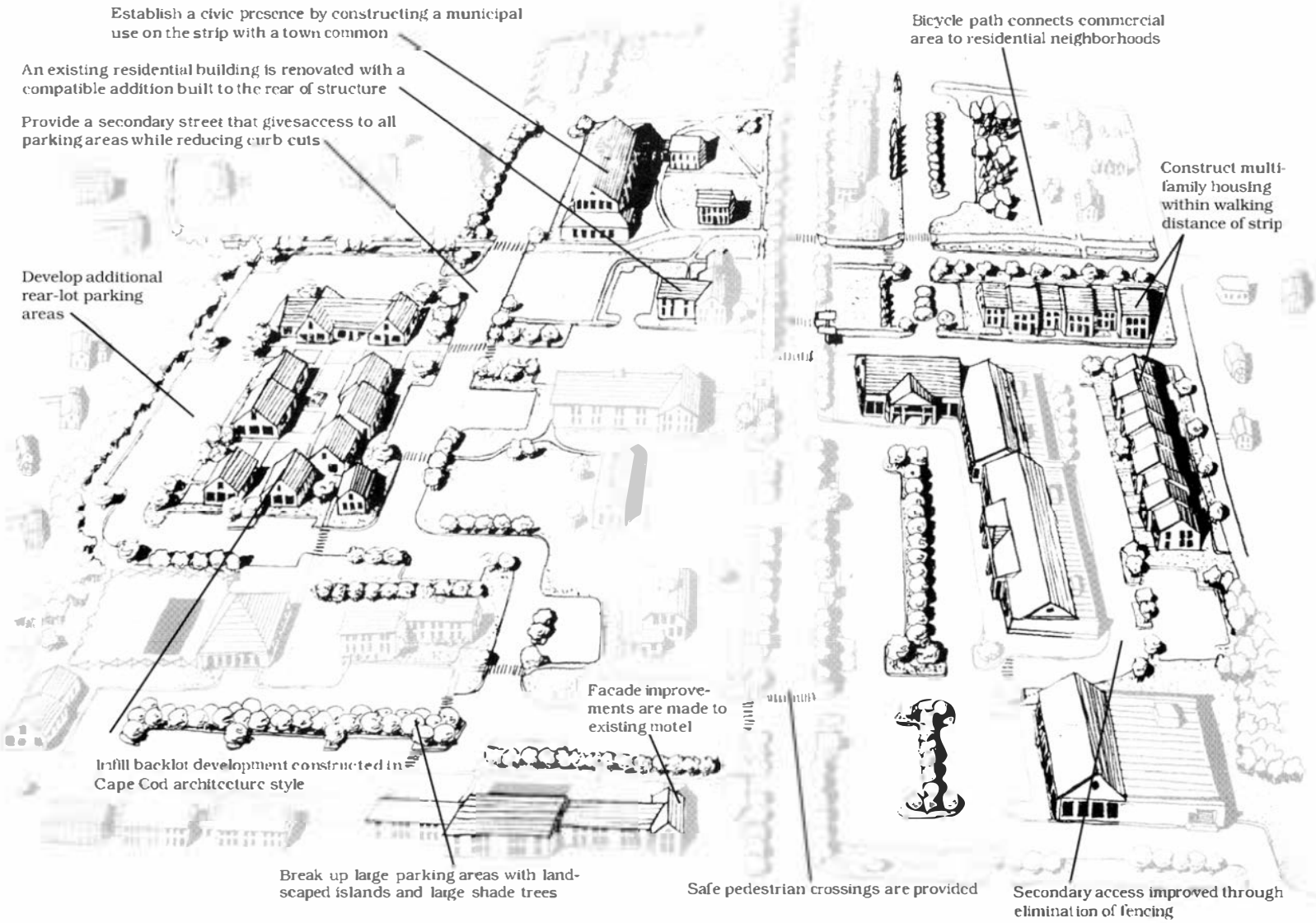
Construct a Mixture of Housing. Housing, either above or adjacent to existing commercial uses, provides affordable alternatives and a convenient location for residents because of its proximity to stores, services, and municipal activities. Heights are maintained at two stories or consistent with surrounding buildings.

Make Connections to Surrounding Residential Neighborhoods. Pedestrian and bicycle paths are constructed from residential areas to the commercial strip area, with bicycle facilities provided at commercial locations, so that one has the option of walking or bicycling to shops and other uses. Development of bus routes is encouraged along roads between residential areas and the commercial strip.

Construct Infill Backlot Development. This development is constructed in a traditional Cape Cod style. Facade improvements to existing commercial buildings are also completed.

Improve Circulation and Existing Parking Areas. Traffic is reorganized by constructing a secondary street that gives access to all parking areas where possible. Traffic calming measures, such as signage or changes in pavement texture, are provided on the secondary street in order to ensure pedestrian safety. Existing curb cuts are then reduced on the main roadway, with pedestrian access to lots improved through elimination of fencing and by providing a series of pedestrian walkways. These efforts help to reduce auto traffic on the main street. Parking requirements are also redesigned to meet average demand and to provide shared parking for compatible uses. Towns may also consider closing all or part of the main street to through traffic for special events to encourage pedestrian activity.

Mark Safe Pedestrian Crossings. Pedestrians can now safely cross the street due to clearly identified crosswalks. This simple task further encourages walking rather than driving to shops and other uses.



Phase III: Backlot Development

Phase IV: Final Steps

The following activities complete the redevelopment process:

Encourage New Infill Construction Along the Main Street. Once backlot development and rehabilitation are complete, these new structures and/or additions to existing buildings continue the uses and the architectural character of the village center fragment.

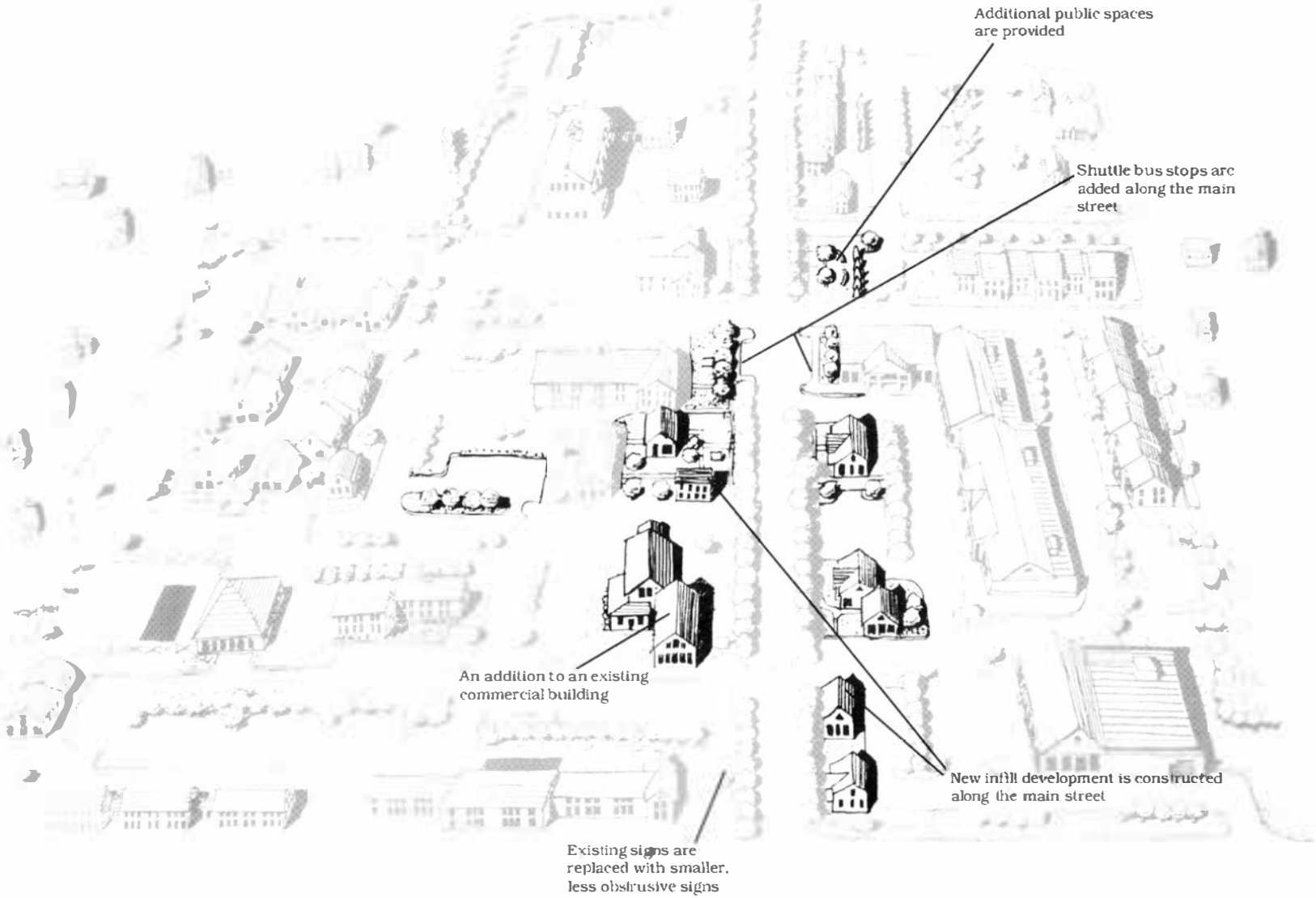
Form Additional Public Spaces Along the Street. Several small pocket parks and pedestrian spaces are developed and landscaped along the revitalized strip to allow attractive places for people to rest and congregate away from traffic and parking lots.

Continue Efforts to Relocate the Placement of Utilities Underground. This ongoing process is coordinated with all major redevelopment activities to reduce costs.

Introduce Public Transportation Along the Street. A shuttle bus service is established to serve both residents and visitors to the area. Bus stops are provided at central locations along the main street.

Retrofit Existing Signs to Meet New Sign Codes. Many signs are replaced over time with smaller, externally illuminated and less obtrusive signs which are designed to be compatible with emerging architectural styles and materials.

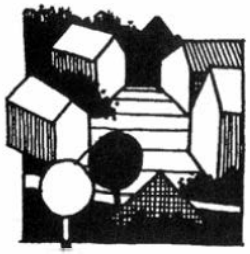
A recently constructed pocket park along the Route 28 strip



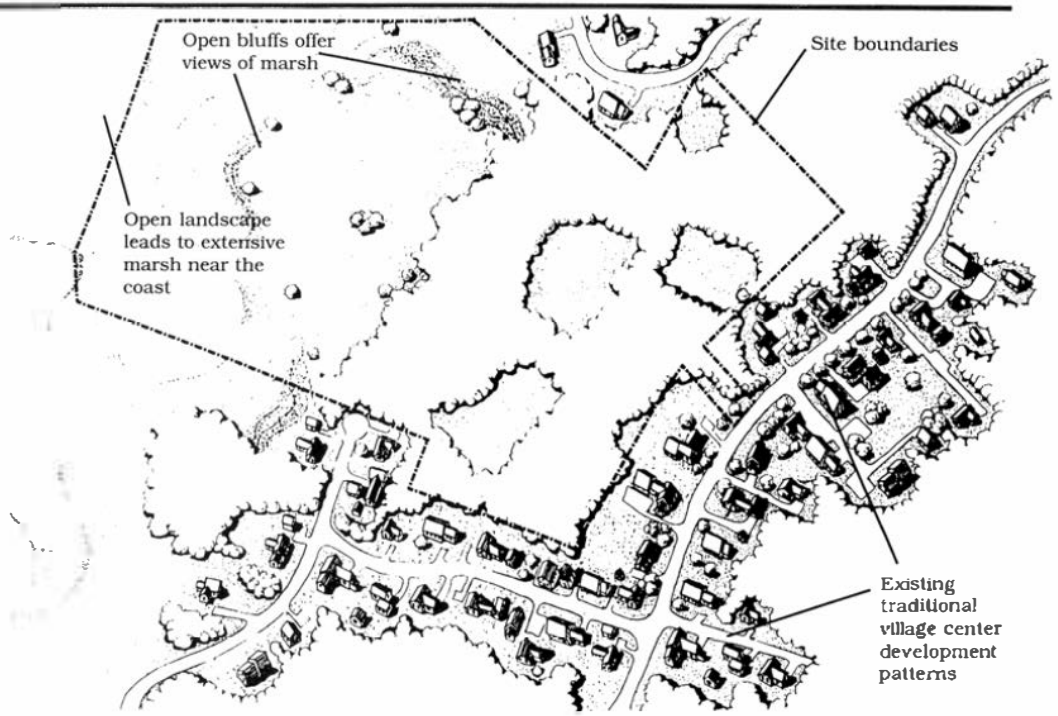
Phase IV: Final Steps

4. Compact Residential Development

Eighty two percent of the 34,000 acres developed on Cape Cod between 1971 and 1990 was for residential purposes, most notably second homes and vacation cottages. These homes were often located on environmentally and visually sensitive landscapes. Existing zoning and subdivision regulations, in part enacted to reduce the amount of development by encouraging larger lots, have contributed to this sprawling development pattern, which is inconsistent with traditional village style development.



New residential development, as illustrated in this case study, should reflect the surrounding historical and natural landscape. Instead of spreading the allowed number of units across a site, an equal number of units are more densely grouped or clustered on a portion of the property. Compact development allows communities to permanently protect open space, important natural features, and recreational areas at little or no cost to the developer or to the community. Proximity to protected open space is often a valuable feature to home buyers. Site preparation and construction costs for roads and utilities are often less than for conventional subdivisions, thereby making affordable housing possible.



Existing conditions/site location

The historic pattern of residential development

Existing Conditions

The site to be developed consists of 38 acres of forested and open land that also includes a portion of an extensive marsh near the coast. The woodland ends at the top of an open bluff on the landward side of the marsh. A traditional village surrounds the property on two sides. The homes in

the village are close together and are consistent with vernacular architectural styles. Because the village center serves as a gateway to the new residential development, it is critical that architectural styles be compatible.

A Conventional Subdivision

The conventional subdivision illustrated below consists of 35 residential units located on a 38 acre site. The conventional subdivision covers the entire site, leaving no protected open space for community use. Very little woodland has been preserved along the roadway to screen the homes and there are no opportunities for public access to the coast. Site preparation and construction costs for roads, utilities and grading are higher than the cluster scenario due to larger lots, wider pavement and longer road lengths.

Compact Residential Development Alternative

The compact residential development alternative also consists of 35 single-family attached and detached homes on the same 38 acre site, which could provide housing for a range of incomes. For the purposes of illustration, this alternative includes homes in both the wooded and open landscape, but outside of environmentally sensitive areas. In the open portion of the site, homes are sited on the edge of wooded areas or nestled into the bluff in order to provide partial views of the coast without dominating the landscape. This siting also maintains a considerable distance from sensitive coastal areas. Homes sited in the woodland portion of the site are located on the edges of wooded areas wherever possible in order to retain existing tree cover and to provide filtered views to more open areas.

Sixty percent of the site has been permanently preserved for community open space. Numerous woodland trails and sidewalks have been constructed to encourage less dependence on the automobile. Residents have access via trails to an open space network which includes the marshland/coastal embayment. Motorists have two expansive water views from the roadway. Planted traffic islands and winding roads reduce driving speeds.

It should be noted that state law requires a special permit for cluster development. If this requirement is changed, towns may wish to consider allowing cluster by right to encourage the provision of more community open space. In addition, subdivision regulations can be amended to allow narrower road and cul-de-sac widths and other reduced road standards. Local zoning can also be amended to allow reduced frontage, setbacks and lot area. In addition, larger percentages of open space should be required within new developments. Subdivision plans with standard lot sizes should be filed along with cluster plans to establish allowable density.

It may be necessary to provide shared wells and/or leaching fields on common land within the cluster development.

The following issues have been considered in developing this cluster plan:

Provide Open Space. The development is organized around a system of open spaces of various sizes that provide public or common areas, protect sensitive lands and vistas, and enhance the regional open space network. Permanently restricted open space includes a large portion of upland adjacent to the coastal marsh, as well as common open space adjacent to each residence, which is linked by a system of footpaths. These areas are connected to nearby town conservation land. Buildings are grouped around a series of commons, gardens and play areas including a ballfield, with benches provided in all common spaces. Each residence is also provided with a private outdoor yard defined by a fence, porch or landscaping.

Minimize Grading and Road Construction. Streetscapes within the development reflect existing patterns of narrow lanes enclosed by buildings, street trees, walks, hedges and fences. Roads of an appropriate width follow the lay of the land to minimize grading, with a wooded buffer retained along the new roadway in order to preserve the rural character of the area. While this new roadway provides an alternative means of driving through the village, cut-through trips are minimized by providing stop-controlled intersections. Runoff is re-directed to vegetated swales to minimize impact to the marsh. Shared driveways reduce extensive road coverage and curb cuts. Where possible, drives, lanes and parking areas are constructed with materials such as gravel or crushed shells.

Design Architecture to be Consistent with Local Forms. The new residences are

Compact Residential: Conventional Subdivision

An example of compact residential development which successfully utilizes traditional Cape forms

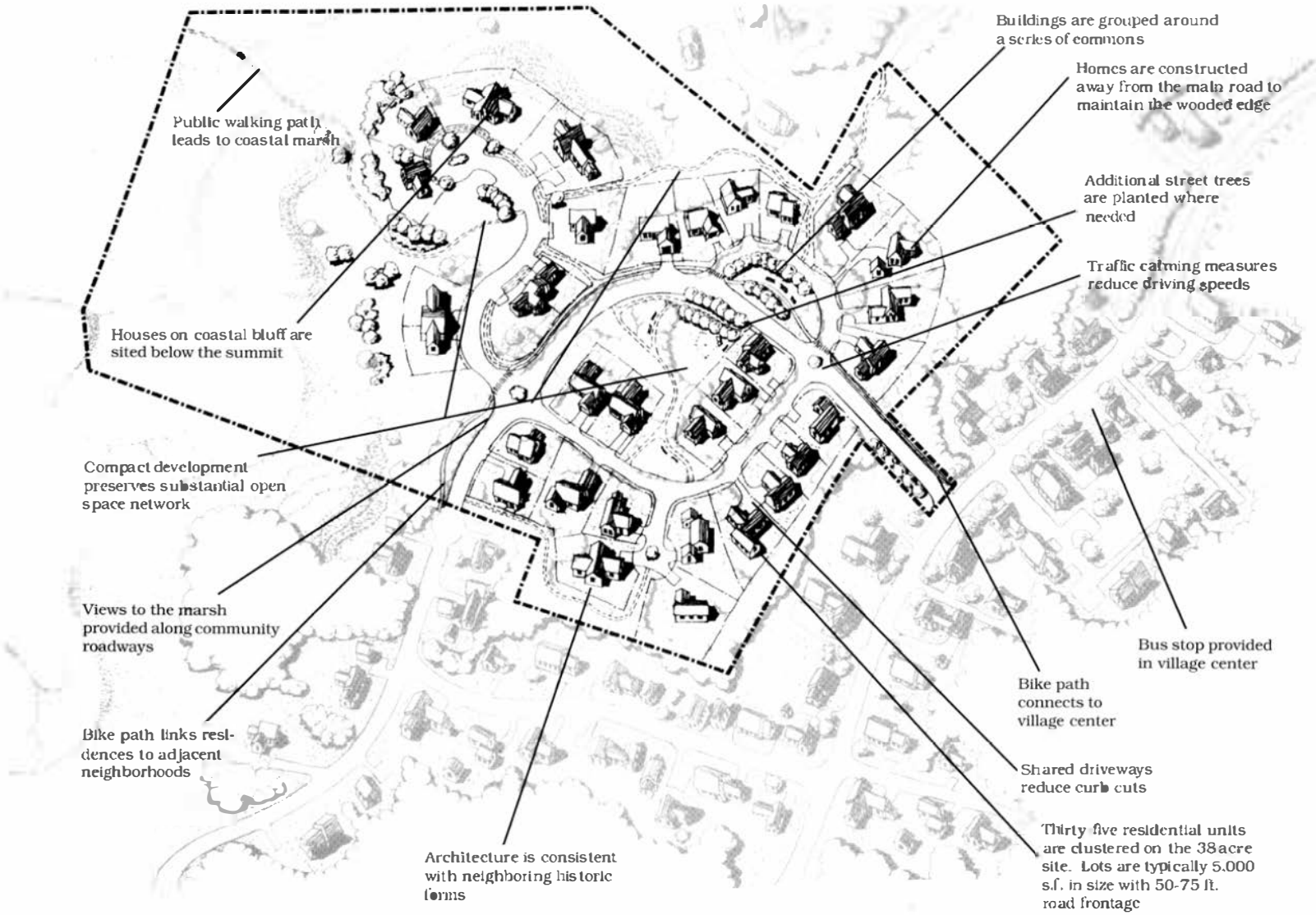
patterned after the simple traditional forms of the existing village. The buildings share a relationship of scale, massing, rhythm of elements, roof lines and materials, yet accommodate individual expression. The additive massing of traditional Cape forms is ideally suited to these housing types, while detached garages and other outbuildings provide interest. Minimal front yard setbacks, porches and semi-public areas are emphasized to establish a connection between public and private spaces.

Respect the Sensitive Coastal Landscape. Houses overlooking the marsh are sited and designed to appear as part of the landscape, reflecting the form and colors of the rolling bluffs and marsh vegetation. Lot lines are located to discourage building atop visible hill summits. Buildings and roads are located to minimize grading and earthmoving. Plantings suitable to the open landscape are provided between these homes and the marsh/embayment as a visual buffer and a means of reducing stormwater runoff.

Keep the Neighborhood Green. Street trees are planted where needed along new streets to provide a sense of enclosure. Vegetation removal is minimized during construction and mature trees are preserved where possible. Trees are used to define public, semi-public and private areas. Plants characteristic of the region are massed against buildings to soften their lines and "set" the buildings into the landscape, particularly around the residences adjacent to the marsh. Arbors and trellises are used to extend buildings into the landscape.

Encourage Alternatives to the Automobile. A new bus stop is provided in the nearby village center. Pedestrian and bicycle networks are constructed to connect the new homes with protected open space, the nearby village, and other residential areas. At a minimum, pedestrian networks are separated from roadways by a planting strip.

Reduce Visual Clutter. All new utilities are buried to make the development more attractive and to protect street trees from damage and unsightly pruning. Ground-level utilities are screened with vegetation. Cutoff light fixtures, which direct light downward and are compatible with building architecture, are provided where necessary. Lights on buildings are used to identify entrances but minimize glare.



Compact Residential Development Alternative

5. Large Scale Commercial Development

Similar to strip development, large new commercial developments, such as malls, shopping centers, and supermarkets, have often been designed in isolation from surrounding neighborhoods. Traffic congestion, combined with a lack of bike and foot paths, have discouraged safe pedestrian or bicycle movement into and out of such commercial facilities. In addition, the scale, bulk, and monolithic massing of these commercial buildings, with their vast amounts of parking, stand in great contrast to the small size and massing of traditional commercial development on the Cape. Striving for compatibility with existing Cape Cod architecture, some large scale commercial developments have integrated vernacular detailing into their design, but have failed to establish important design relationships which could reduce their visual impact and could establish connections to adjacent neighborhoods or other commercial uses.

Existing Conditions

The approximately fourteen acre site consists of oak and pitch pine wooded and open areas with relatively flat topography. The site also contains a freshwater wetland surrounded by wooded upland. Newer single family residential development is located adjacent to the site, with existing small scale commercial development located directly opposite the site on an existing roadway.

Proposed Development

The example of large scale commercial development presented in this case study includes a 60,000-square-foot anchor store, several smaller retail shops and offices, and a mix of housing, totalling 120,000 square feet.

Developing the Site

The following steps are employed to ensure that developments of this size are compatible with existing Cape Cod architecture and village forms:

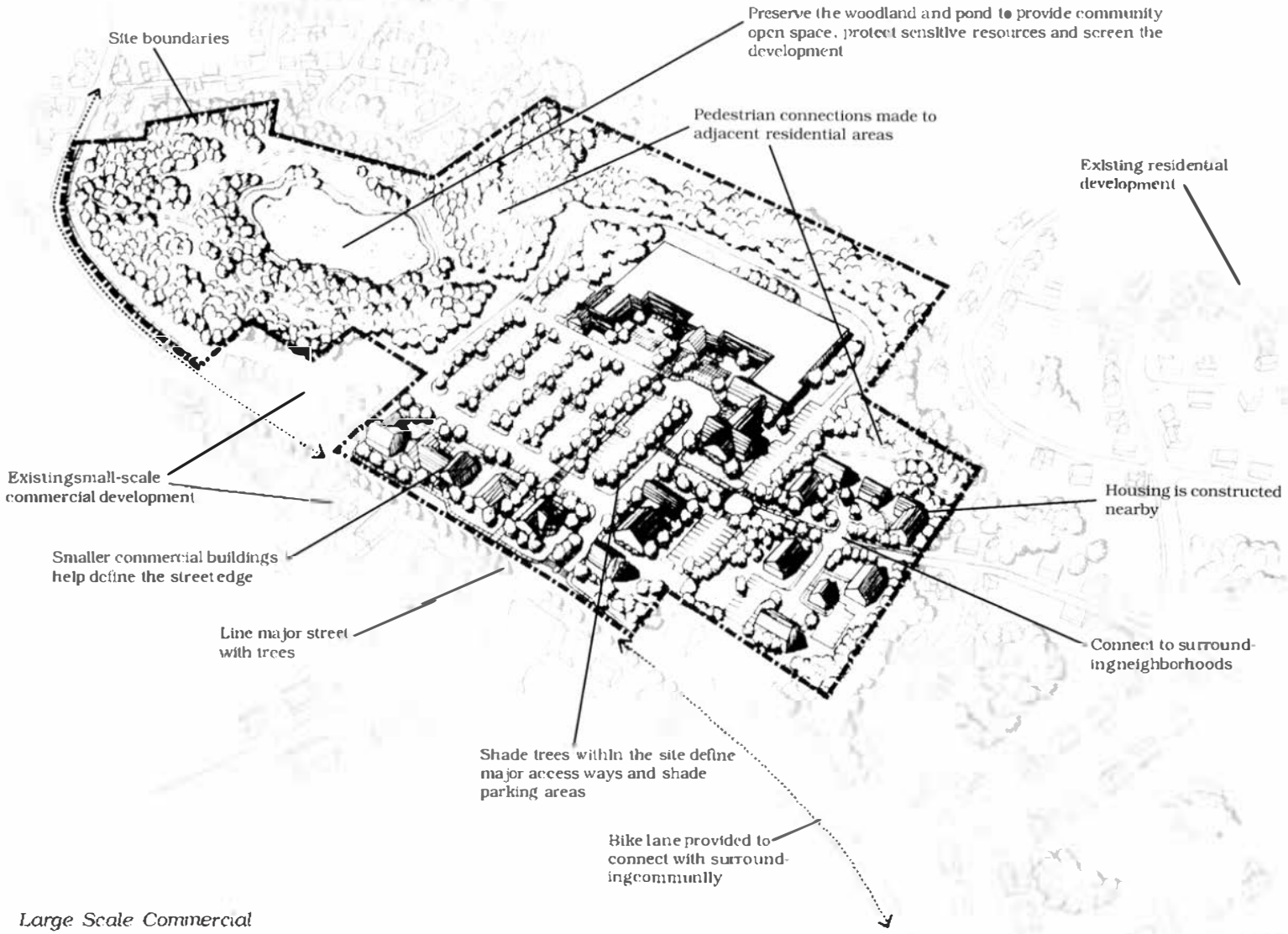
Develop Within a Designated Growth Center. In this case study, this process has ensured that the project has adequate infrastructure and minimal natural resource constraints. The development is integrated into the site by tailoring it to existing features such as an existing wetland and mature woods.

Provide a Mix of Retail, Office, and Residential Uses. To stimulate pedestrian activity within the development, retail space is located on the ground floor with offices or apartments above. A cluster of housing is also constructed nearby to reflect some of the qualities of a village center. Parking requirements are reduced for this mixed use development by calculating parking requirements based on average rather than peak needs, and by allowing shared parking for shoppers and employees during the day and for residents at night.

Integrate with the Surrounding Community. The development is connected to adjacent residential areas by a system of footpaths, a bike lane, sidewalks and streets.

Retain Wooded Areas. Substantial woodland is preserved to screen the development and to maintain the continuity and functions of the original landscape. A wooded buffer between the new commercial development and the existing wetland is retained in its natural state and permanently protected as open space through a conservation restriction. This open space is also linked to the wooded area behind the anchor store, which screens the loading docks from surrounding areas. These open space areas are in turn connected to an adjacent open space network. Preserving

Existing vegetation retained to buffer commercial development from nearby homes



Large Scale Commercial

and connecting open space in this manner enhances its viability as wildlife habitat.

Enhance the Existing Streetscape. Smaller commercial buildings are sited adjacent to the roadway leading to the site to help define the street edge. The main roadway is also lined with shade trees to provide enclosure. Within the site, internal circulation roads are lined with shade trees to define major access ways. Sidewalks are provided along shopfronts to encourage pedestrian activity and safety.

Remain Consistent with Cape Cod Styles and Development Patterns. Smaller building masses are attached to the front of the anchor store to reduce its scale. This creates the appearance of a cluster of several smaller buildings rather than a single large structure. Simple gabled roofs screen the flat roof of the anchor building from adjacent roadways. Frontage buildings, designed in Cape Cod vernacular styles, are constructed along the main roadway. Siding, roofing, and details reflect surrounding buildings.

A new development mimics the small size and massing of traditional buildings

A strong sense of entry: view through the main entrance

Dispose of Stormwater On-Site. Stormwater is disposed of in part through use of grassed swales, while avoiding direct discharge to the wetland. While not illustrated on the site plan, an appropriately sited and screened retention/detention basin may also be required for this type of development.

Encourage Alternate Modes of Transportation. In addition to sidewalks provided within the development, a bike lane is added to the main roadway with a network of walking footpaths provided to link the development with surrounding neighborhoods. Bus stops are located within the development and on the main roadway.

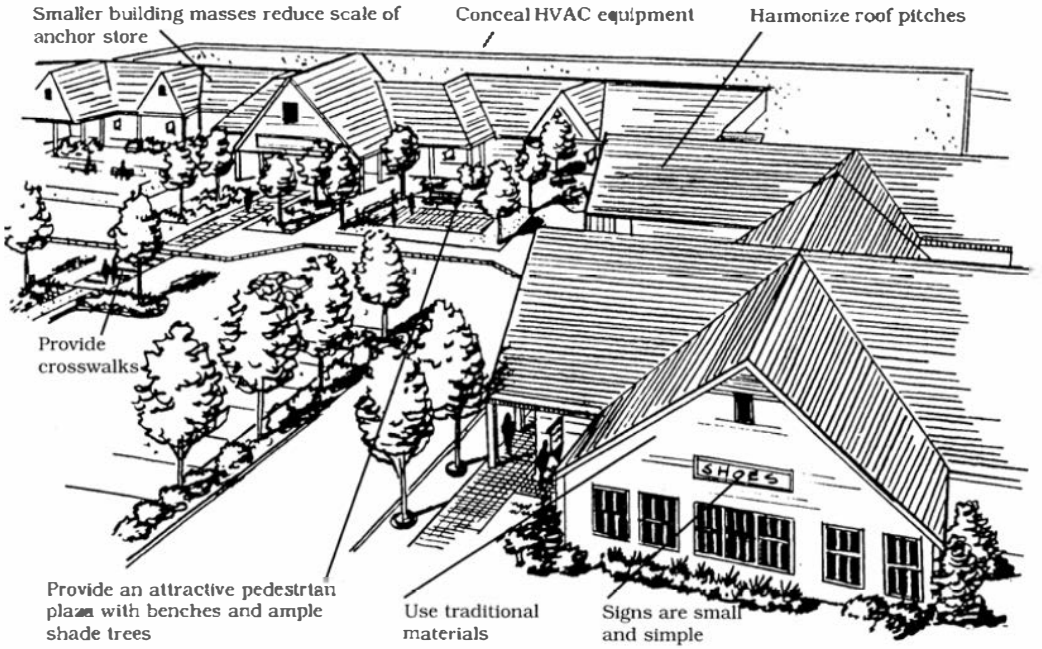
Eliminate Visual Clutter. Utilities are buried underground. Mechanical equipment located on the ground is screened with fencing or vegetation. Roof-mounted equipment is located within accessory structures or behind gable roofs, beyond ground level sight lines.

Provide Appropriate Signage. Signs are small, externally illuminated and clustered in a landscaped island at the entry to the development rather than using a large

tower-mounted sign. Smaller painted and carved signs are located by the entrance of each business.

Reduce Glare through Appropriate Lighting Design. Parking lot lighting has cutoff fixtures below the mature height of trees located in parking lot islands. This prevents the ambient "glow" or light pollution typically resulting from large developments. Pedestrian-scale lighting, eight to ten feet in height, is located on walkways and adjacent to store entrances. Lighting fixtures are compatible with the new architecture. Attached building or wall pack lighting is screened by the building's architectural features to eliminate glare to surrounding neighborhoods.

Parking lot lighting in scale with its surroundings



Articulation and detailing of a facade to reflect the patterns of local historic buildings

Provide Attractive Parking Areas and Public Spaces. Extensive landscaping is provided throughout the parking lot, including trees and other native vegetation in parking islands which provide shade and visual relief. Parking lots are screened from the roadway by smaller frontage development and existing vegetation. Trees and massed vegetation are located near the buildings, with a landscaped public space provided in front of the anchor store to provide a gathering place for shoppers.

MAKING IT HAPPEN

1. **Introduction**
2. **Recommended Revisions to Local Bylaws and Regulations**
3. **Promoting Interest in Good Design**
4. **Legal Tools for Influencing Aesthetics**
5. **Costs**

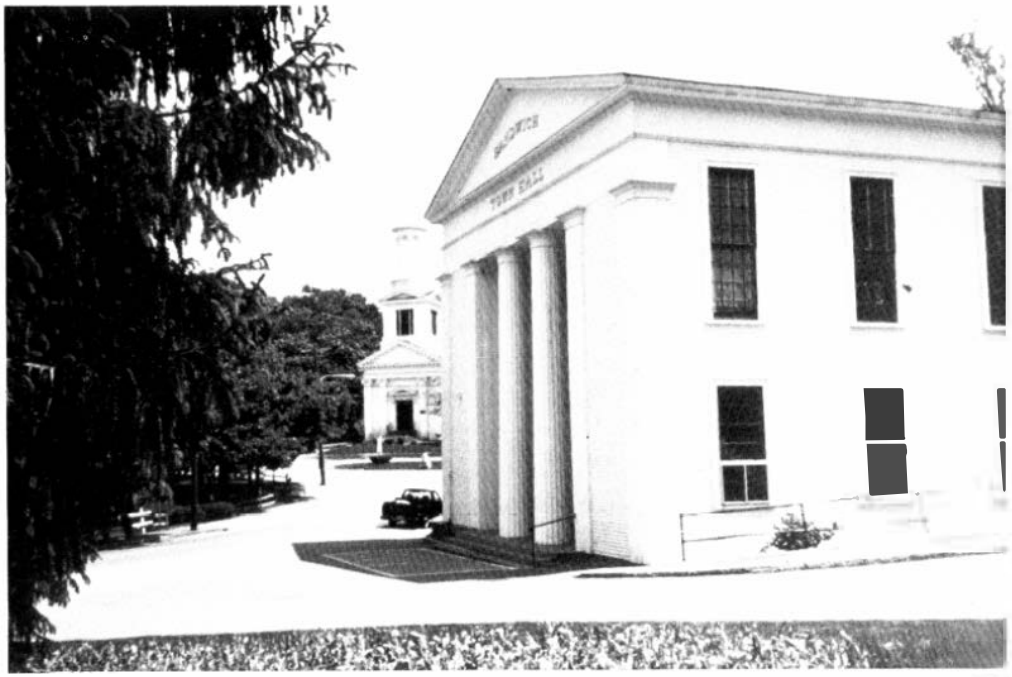
1. Introduction

The development of these design guidelines is only a first step. If we are to successfully design with the character of Cape Cod in mind, residents and visitors will need to fully appreciate the elements that make up the communities that they enjoy, local bylaws and regulations will need to be revised, and builders and developers will need incentives to embrace the concepts in the guidelines. Most importantly, all parties will need to establish good lines of communication if the community is to attract development that enhances the quality of life of its citizens. This section discusses a variety of ways in which the above can be accomplished. First, possible amendments to local bylaws and regulations are described. This is followed by a discussion of how to promote interest in good design through developer incentives, public investments in infrastructure, and community involvement in the planning process. Finally, legal issues and costs associated with implementation of the guidelines are explored.

2. Recommended Revisions to Local Bylaws and Regulations

In many cases, the design guidelines in this manual will conflict with existing local zoning bylaws and regulations. When zoning was developed in the first part of this century, it was not based on maintaining regional traditions and styles, but was designed primarily to separate incompatible uses. Over time, zoning and subdivision regulations have been used by many communities to attempt to control growth or protect water quality through large lot sizes or other dimensional requirements. Unfortunately such standards tend to conflict with the goal of creating compact developments or maintaining small town character. As a result, existing zoning has often prevented new development from preserving and enhancing the character of the Cape's communities. One of the challenges facing Cape Cod is to rethink zoning and subdivision regulations in a manner that will preserve the character of our small towns, while at the same time protecting water quality and other natural and cultural resources.

As Cape Cod communities prepare Local Comprehensive Plans consistent with the Regional Policy Plan, the opportunity exists to revise zoning standards and subdivision regulations to allow future development and redevelopment to reflect each



Town boards should take a leadership role in determining the character of their communities

community's traditional character while protecting natural and cultural resources. Key standards that towns should reconsider in light of these guidelines are allowable density, mixing land uses, setbacks, open space and road standards. As town boards undertake the task of reviewing their regulations, they should survey their residents or conduct workshops to determine the elements that contribute positively to the town's community character (see Promoting Interest in Good Design below). Towns can then use this information to amend their local bylaws and regulations. Below is a partial list of some initiatives that might be undertaken through zoning and regulations to foster the goals of the design guidelines:

- Adjust lot sizes to accommodate more compact development in designated growth centers while providing more open space in outlying areas.
- Adjust setbacks and coverage requirements to reflect traditional village development patterns. The adoption of maximum, rather than minimum, setbacks (such as front setbacks) should be considered in this process.
- Adopt mixed-use zoning in growth centers to maintain community vitality and reduce traffic.
- Allow for accessory structures/uses on-site to encourage infill and visual interest in growth centers.
- Establish requirements for developers to maintain or create compatible building massing and materials, through height and bulk, roof pitch and material restrictions.
- Reduce required subdivision road widths and curve radii where appropriate to retain the historic streetscape and minimize clearing of rights-of-ways.
- Develop scenic road regulations that protect all character-defining elements of the roadway.
- Require all new utilities to be buried underground.
- Reduce on-site parking requirements and encourage the use of shared or reserve parking. Also require that parking be located to the side or rear of buildings.
- Adopt bylaws that restrict clear cutting or other site development activities prior to issuance of permits, and which provide for protection of existing trees when developing a site.
- Increase landscape requirements for both new development and redevelopment. In particular, require the planting of shade trees along roads and within parking lots.
- Where appropriate, require sidewalks or footpaths along new roads and expand sidewalk networks in existing developments.
- Rehabilitate existing signage, and reduce the number and size of new signs, through revised sign codes which specify placement, sizes, colors, illumination and materials to be used.
- Adopt bylaws and regulations that foster increased environmental standards such as restrictions on individual docks and piers, setbacks on eroding shorelines, and increased septic system requirements where appropriate.

A typical Cape Cod village with minimal front setbacks

Bylaws should allow and encourage preservation of traditional Cape Cod forms

In order to accomplish several of these initiatives, in particular directing development to designated growth centers while protecting open space in outlying or environmentally sensitive areas, communities may wish to consider incorporating a transfer of development rights (TDR) program into their Local Comprehensive Plans.

A handbook for New Jersey municipalities entitled "Planning for Transfer of Development Rights" suggests that TDR provides a means of achieving a community's long-range planning goals while accommodating development interests. TDR transfers new development out of areas targeted for resource protection and relocates it into designated growth centers. While TDR programs may vary from one community to the next, all should contain the following four elements:

1. The Sending Area, preservation area(s) such as wetlands, zones of contribution, or coastal areas where a resource is protected;

2. The Receiving Area, growth centers(s) to which development is transferred. This area's ability to accommodate development will determine the TDR program's ultimate success;

3. Allocation of development credits to balance the increased land value that occurs in growth centers (Receiving Areas) against the corresponding decrease in value experienced in preservation areas (Sending Areas);

4. A legal framework within which the TDR program operates such as the Local Comprehensive Plan and zoning ordinance for each community.

The Cape Cod Commission will provide technical assistance to communities in revising local bylaws and regulations and developing TDR programs to achieve the objectives of the design guidelines.

3. Promoting Interest in Good Design

Revisions to local bylaws and regulations will merely enable new development to occur in a manner that is compatible with traditional development patterns. Other affirmative measures will also be needed by communities in order to accomplish the objectives of the design guidelines. These measures, described below, include offering incentives to developers, making investments in infrastructure, and educating and involving the community in the planning and design process. Developers should seek the assistance of design professionals such as landscape architects and architects to provide design leadership for site development proposals.

Developer Incentives

Developer incentives should be designed to encourage development and redevelopment in growth centers. These incentives could include one or more of the following:

- Provide density bonuses for development in growth centers or other environmentally appropriate areas, thus yielding a higher return on the development investment.
- Permit transfer of development rights to encourage new development and redevelopment to locate within growth centers while preserving open space between centers.
- Establish a streamlined review process for projects that meet a locally approved set of performance standards.
- In towns that have an annual growth cap, establish a point system for good design and make a limited number of building permits available to the best projects.
- Allow relaxed parking requirements for projects within designated growth centers.
- Provide property tax incentives for adaptive reuse or infill projects.

Local Investments in Infrastructure

In addition, towns will need to consider making investments in infrastructure and other improvements in order to guide future development and redevelopment to growth centers. These investments could include:

- Provide needed infrastructure improvements or public transit to growth centers.

Encourage improved public transportation to growth centers

- Provide public sector contributions and technical assistance for design and facade rehabilitation.
- Assess impact fees and betterments for infrastructure improvements, and channel these funds back to growth centers through establishment of business improvement districts.
- in village centers, lower speed limits and implement "traffic calming" strategies to encourage slower traffic and increase pedestrian and bicycle use, which should increase business activity.
- Consider the purchase of land or development rights in order to direct growth away from sensitive areas and those areas in need of preservation. Reliable funding mechanisms for the purchase of open space include property transfer taxes, tourism-related income sources, and regional or state referenda for bond issuances.

Promoting Community Involvement

Community Involvement in the Local Comprehensive Planning Process. The best method for ensuring that new development will preserve community character is to actively promote citizen involvement in the local comprehensive planning and development approval process. Most residents, when asked, have strong opinions about what they like and dislike in their community and what they would like to see improved. While there is often a diversity of opinion about specific issues such as lot sizes in residential areas, or the desired location for new downtown parking, there is often a surprising degree of consensus about the basic character and vision for a community. This consensus can be the foundation for the creation or revision of zoning bylaws and regulations that will achieve a common vision through the design of successful developments that can be supported by residents.

One way to begin the process of developing consensus about the future of a community is to conduct a community forum or workshop. Such workshops are also a critical first step in the development of local comprehensive plans. Workshops should be widely publicized well in advance, scheduled at convenient times for different interest groups, and designed to attract a cross-section of the community. For example, invite residents of all ages, board members, the business community and developers to participate, and ask planners or community leaders to facilitate the discussion. Participants can be divided up into small groups and encouraged to identify positive and negative elements of their community and ideas for the future. Afterwards, groups can be brought back together to compare notes and see where consensus exists.

The format for workshops can vary greatly, ranging from specific topical workshops, interviews of community leaders regarding their views on town problems and solutions, or mapping exercises to help the public visualize the meaning of the plan's policies and recommendations. Other tools to encourage community involvement can include the following:

- conduct a survey to identify key goals and concerns
- organize groups to participate in "visioning" exercises
- hold special events such as a town supper or festival to engage people in the planning process
- identify key organizations in town and arrange to make presentations at their meetings
- develop plan materials for school children to "take home" with them
- devise graphic ways to illustrate the results of proposed policies, such as build-out maps, perspective drawings or photo-montage techniques.

Regardless of the format used, towns should also involve the media in helping to get the word out about the local comprehensive planning process, through techniques such as issuing press releases, preparing video presentations for local access cable television, preparing articles for local weekly newspapers, or arranging for local radio or television interviews.

Establish a Land Use Forum. Communities can also consider the establishment of a "Land Use Forum" to review specific developments proposed for the town. This approach may be appropriate for smaller communities where a Site Plan Review process is not in place. The participants in a Land Use Forum can include interested citizens and groups, neighbors, town leaders and the landowner or developer. The task of the Forum is to create a non-adversarial environment where everyone who could be affected by a development has input into the shape and form it takes.

Participatory planning in action

The goal is to find consensus among all the participants. The most important question the Forum must answer is: " How can this development be shaped to improve our community?" Once a satisfactory plan has been prepared, the process of securing permits from boards may be quicker because the plan has the support of the community and its major problems have been resolved.

Other Volunteer Efforts. Finally, communities can encourage creation of downtown improvement areas, homeowner's associations, and other groups or organizations to target parts of a community for a focused improvement campaign. For example, downtown associations can pull together residents, shoppers, business people, and board members to focus attention on improvements to village centers, such as tree and flower planting, lighting, park development, or signage rehabilitation. These and similar activities focus and combine the civic concerns and energies of different groups within the community to determine what is needed, pursue funding sources, and marshal local skills and resources to improve towns and villages.

4. Legal Tools for Influencing Aesthetics

Many factors may affect the appearance of a community. These factors include building and parking lot placement on a site, building height and scale, roadway dimensions and materials, buffer plantings to screen development, signage and outdoor lighting. This section examines the types of regulations that towns may use to affect the appearance of new, and in some cases, existing development.

Influencing Aesthetics Through Zoning

The Massachusetts Zoning Act (M.G.L. Chapter 40A) does not expressly grant towns and cities the authority to adopt ordinances and bylaws for purely aesthetic purposes. However, the power to adopt such regulations may be implied in the Zoning Act as a valid exercise of the police power to protect the public welfare. Additional authority to adopt aesthetic regulations may be found in the Home Rule Amendment to the Massachusetts State Constitution and the Massachusetts Home Rule Statute.

The authority to adopt regulations based upon purely aesthetic purposes has not been addressed by Massachusetts courts. Thus, it is not certain whether a regulation adopted for purely aesthetic purposes would be upheld. It is therefore recommended that proposed regulations couple aesthetic goals with other police power purposes such as economic development, historic preservation and/or public safety, where appropriate. In such instances courts have upheld regulations, finding that the aesthetic purpose does not render an otherwise valid police power regulation invalid.

Recommendations for Influencing Aesthetics Through Zoning

It is recommended that towns consider the following in adopting aesthetic regulations:

- Always consult town counsel when drafting zoning and general bylaws and regulations concerning aesthetic controls.

- Establish well defined districts with definite boundaries.

• Create the bylaw, ordinance or regulation with a closely drawn purpose. For example, the purpose may be to preserve an area which is generally uniform in design and structure, or may be a locality of historic significance. Massachusetts Courts may be more likely to uphold a bylaw or regulation which is limited to exterior features subject to public view.

• Adopt aesthetic regulations where they may be closely tied to other legitimate police power objectives. A regulation concerning aesthetics is more likely to be upheld where the purposes section of the regulation validly calls out historic preservation, economic development and/or other purposes. Public safety considerations may also add validity to aesthetic regulations. For example, limitations on building heights (promoting public safety from fires) have been upheld as promoting the public safety as well as promoting aesthetic values.

• Draft the bylaw or regulation with specificity to avoid an inappropriate application. Attempt to minimize instances when, because of peculiar hardship and remoteness from the legitimate purposes of the bylaw, the application of the law would be deemed unconstitutional.

• Use incentives as an alternative where restrictions may result in a regulatory taking (see Promoting Interest in Good Design above). Consider developing a variance procedure to allow municipal officials to address takings claims before they are filed in court.

• Consider how the regulation will affect educational and religious uses. While the Zoning Act does not allow communities to exclude such uses from particular zones, those uses may be subject to reasonable dimensional and/or design regulations.

Other Tools for Influencing Aesthetics

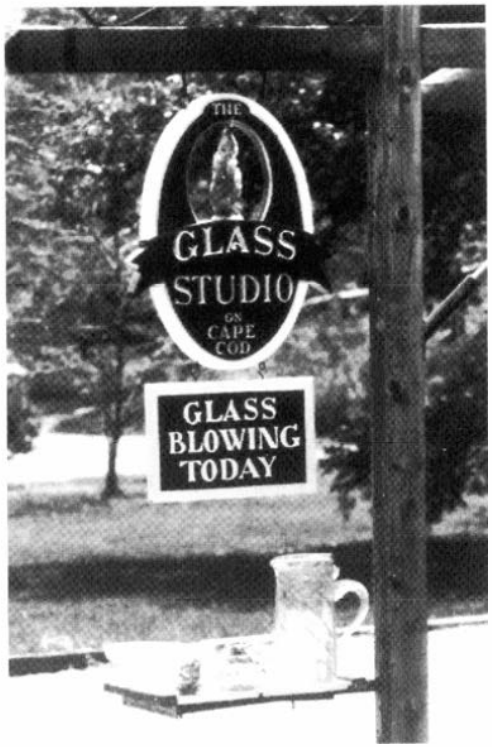
Historic District Regulation. Massachusetts laws at M.G.L. Chapter 40C, authorize towns to create Municipal Historic Districts to be regulated by a local Historic District Commission. A Chapter 40C district may provide for the regulation of exterior architectural features and facades with respect to alterations to existing historic structures and new development proposed within the district. In a Chapter 40C district, all regulated changes are subject to local control.

In addition, towns may petition the state legislature to create special historic districts, such as the Old Kings Highway Historic District and the Chatham Historic

Chatham's Historic Business District

Business District. Both historic districts have regulations tailored specifically to their issues of concern. For example, the Chatham Historic Business District regulations seek to preserve the distinctive historic character of the commercial area while ensuring its economic vitality.

Sign Regulation. As noted above, towns may adopt zoning bylaws controlling signage under Chapter 40A and Section 23 of M.G.L. Chapter 93. Non-conforming signs may be eliminated over time by requiring sign alterations to conform to the bylaw. Further, towns may consider requiring that any sign which has deteriorated to such an extent that the cost of restoration would exceed the cost of replacement conform to revised sign regulations. The purposes of signage control may be aesthetic as well as economic. For example, one Cape community has adopted a zoning bylaw restricting signage which sets forth "guidelines for the protection of the visual environment of the Town; the safety, convenience, and welfare of the public; and to help protect [the Town's] businesses and encourage their successful growth and development".



Signage which is consistent with Cape Cod's character

Site Plan Review. Site plan review offers towns the opportunity to influence the environmental and aesthetic impacts of a proposed development early in the planning process. This review increases the towns' ability to define the character and layout of new development and to work with the developer to meet the town's and developer's needs. Design related issues which may be considered in the site plan review process include road and parking layout, landscaping, open space, building location and size, massing, facade treatment, materials, signage and lighting.

While site plan review is not expressly authorized in M.G.L. Chapter 40A, state courts have upheld the review of site plans since at least 1966. There are many types of site plan review, ranging from a non-binding advisory evaluation to a required review where reasonable terms and conditions can be imposed on as-of-right uses or those which require a special permit.

Subdivision Control. Towns may adopt subdivision regulations pursuant to the Subdivision Control Law, M.G.L. c. 41§ 81K - 81GG. Subdivision regulations provide another important tool in defining the character and layout of new developments. For example, flexible regulations regarding road width, alignment and materials may provide one means of shaping the character of new development in a community.

Site Clearing/Earth Removal Bylaws. Many of the suggestions contained in the guidelines may cost more to achieve after a developer has clear-cut a site. It is highly recommended that towns adopt a site clearing/earth removal bylaw to prevent clear-cutting of a lot prior to development. Preservation of natural features, native trees and shrubs promotes aesthetic as well as environmental qualities of a community.

Regulation of site clearing may be achieved through a zoning bylaw, a general bylaw, or both. Towns may enact a general bylaw governing earth removal under M.G.L. Chapter 40 §21(17). It is worth noting that C. 40 §21(17) provides for the imposition of penalties.

Paying for Consultants to Review Proposed Developments. Finally, it should be noted that under Massachusetts law, towns may establish regulations to require applicants to pay for consultants to review

their proposed development. Such consultants are chosen and hired by the local board to assist in review of the developer's proposal. Chapter 593 of the Acts and Resolves of 1989 allows towns to establish special accounts for certain municipal boards to hire consultants with monies provided by the developer.

5. Costs

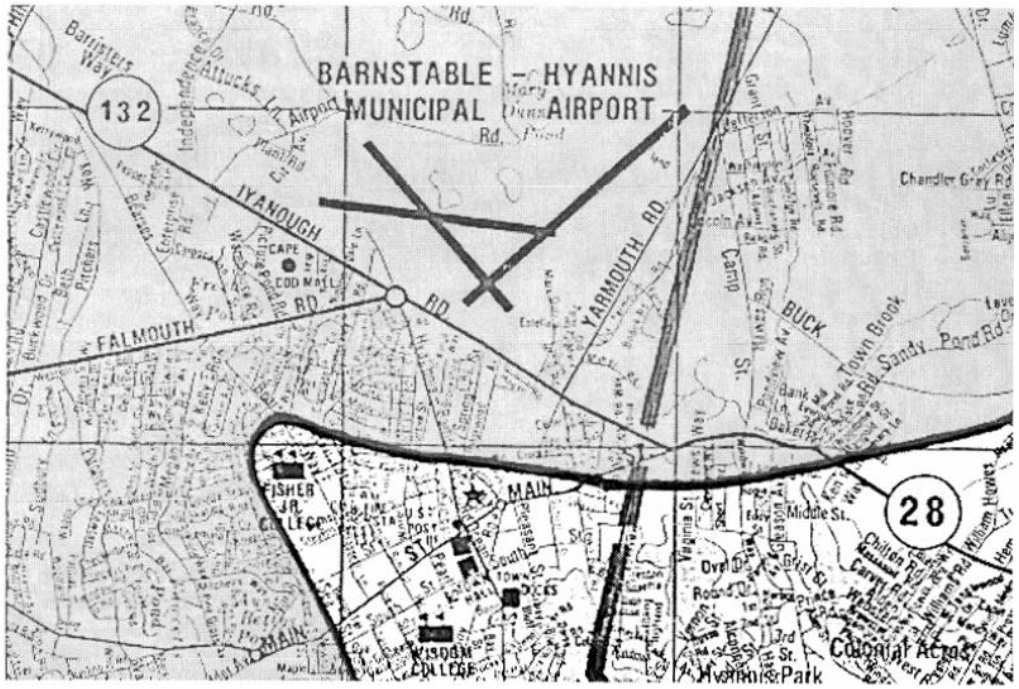
The natural, historical and cultural environment of Cape Cod attracts millions of visitors each year. Maintaining and enhancing this environment is therefore vital to the Cape's economic health. As nationwide competition to draw tourists steadily increases, more importance will be placed on the appearance of a community in attracting those visitors.

The design guidelines recommend numerous ways to enhance the visual environment and appearance of the Cape's communities in an environmentally sensitive manner. Clearly, many of these suggested improvements will require additional funds to carry them out. In the short term, the costs of implementing the guidelines may be higher than for conventional development. Over the long term, however, the benefit of maintaining the Cape's viable tourist economy will far exceed these initial costs. In addition, costs will need to be shared between the public and private sectors if the design guidelines are to be successfully implemented.

Three major areas relating to the cost of implementing the design guidelines are discussed in the section below. The first relates to the overall cost of locating development within growth centers, the second relates to actual site selection and development, and the third includes the costs relating to building design.

Project Location

The guidelines and case studies stress the importance of locating new development and redevelopment within identified growth centers. Clustering development which is located outside of these centers will also help to preserve the rural character and village lifestyle of the region, while protecting the Cape's fragile resources. In many cases the initial costs of locating development within growth centers may be higher where public investment in infrastructure, such as roadway capacity, public transit, or utilities is required. Designating an area as a growth center will necessarily require a commitment on the part of the towns to



An important factor in planning growth centers is location of zones of contribution

provide this infrastructure in order to encourage development in these locations. However, if we are successful over the long term in guiding development to growth centers while preserving outlying open space, the overall visual environment which is critical to the economic health of the Cape will be maintained.

Site Selection and Development

Appropriate site selection can result in reduced development costs. The costs associated with detailed environmental studies and mitigation can be reduced by selection of a site that is outside zones of contribution to public water supplies and other sensitive environmental areas. By selecting a site with as few physical limitations as possible, such as steep slopes or wetlands, grading and other site preparation costs can be reduced.

Siting Buildings in Coastal Areas. Particular attention needs to be paid to the economic and environmental cost of siting buildings within coastal areas. Locating buildings away from sensitive coastal resources reduces the need for shorefront protection measures such as vegetative plantings, revetments or beach nourishment. However, where this is infeasible, considerable long-term savings can be realized by constructing development that exceeds the standards of the National Flood Insurance Program, and by incorporating the guidelines of this section for new development and redevelopment. Relocating existing waterfront parking lots will involve additional initial costs to the developer or town. However, relocation will reduce the risk of storm damage. Using pervious materials for new or relocated parking lots will also result in lower repair costs if the lots are damaged during a storm, although maintenance costs may be higher. Finally, the cost of shared community docks and boardwalks can save money while creating less impact on the environment.

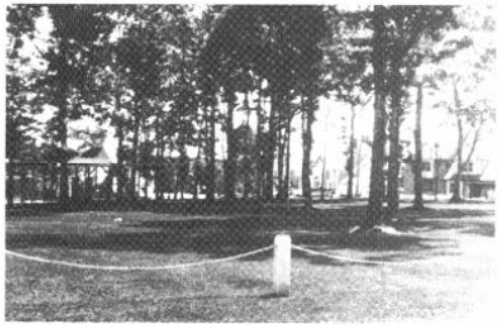
Providing Open Space. Protected open space often increases the value of surrounding land. Open space can therefore pay for itself over time through additional property taxes a town may receive for adjacent property.

In addition, while conservation land provides little direct revenue to communities, it also demands few services. Numerous studies have shown that open space provides a better overall return to a community in terms of tax dollars versus service costs than residential development. There is also an indication that open space may

Cape Cod's coastal areas need special protection measures

provide a better return than some commercial/industrial development. As a result, it is often less expensive in the long run for a community to acquire open space than to have it developed.

Cluster Residential Development. Clustering development on a site can have important economic and environmental benefits. Studies have shown that the net public costs resulting from low-density or "sprawl" development are higher than those resulting from cluster development. Protected open space created by clustering development can provide significant benefits to the community, developer and the homeowner at little or no additional cost. By clustering development within the site, land clearing costs as well as road and utility lengths can be reduced. Open space provided through cluster development allows communities to reduce the need for acquisition and maintenance of parks and playgrounds, and may also reduce road maintenance and utility costs. Cluster residential developments may sell better and faster than their conventional counterparts due to their proximity to protected open space. This benefits the developer as well as the ultimate homebuyer, who may realize faster appreciation in resale value than for a similar home in a conventional subdivision. Finally, the developer may be able to take advantage of tax incentives available for providing protected open space.



Open space provided by cluster residential development

Transportation Networks. Maintaining existing road widths and constructing new roadways to minimize cut and fill can result in cost savings. Additional costs will be incurred to provide sidewalks, bike paths, and site furnishings, as well as planting additional street trees. These activities can be phased in order to spread the cost burden over time, with the possibility of seeking donations from local businesses for street furniture and street trees. Roadway and drainage upgrades, as well as sidewalks and bike lanes can be done during road reconstruction or repaving projects to accomplish this at lower cost. Constructing parking lots according to the guidelines can result in less cost due to reduced paving requirements for shared parking, and the use of pervious materials. Subsidies may be available to assist with the provision of additional bus service.

Landscaping. Complementary landscaping is an important and often overlooked component of site development. Providing additional landscaping will require additional up-front costs. However, it has been shown that trees and landscaping can add significant value to a property. The increased cost of providing landscape improvements recommended by these guidelines can also be offset by retaining and integrating existing wooded areas as buffers where possible.

Utilities. The cost of screening mechanical equipment and placing new on-site utilities underground is minimal, and is often required by local zoning bylaws and subdivision regulations. However, the underground placement of existing overhead wires and utility poles located on public roadways will require significant planning, negotiation and initial costs. However, in coastal areas such as Cape Cod where hurricanes and other severe storms often occur, the long term maintenance and replacement cost for underground utilities could be much less than for overhead lines and poles. It is therefore anticipated that this activity will be undertaken over time and through a combination of various public and private efforts. In addition to initiatives available under M.G.L. Chapter 166, towns may also work with state agencies or public utilities to place existing utilities underground when roadway improvements or replacement of other infrastructure is planned. Property owners may also individually or cooperatively request and pay for placement of utilities underground at locations where poles and lines connect to their homes.

Outdoor Lighting. Reducing footcandles for outdoor lighting while maintaining a safe lighting level will result in a greater number of light poles and therefore additional cost to the developer or community.

Communities may choose to phase replacement lighting over time to reduce the initial costs. However, over time, reduced energy costs may result with the use of lower wattage lighting. As light pollution is becoming an increasing concern both nationally and on Cape Cod, the long-term benefits to the community outweigh these initial costs.

Signage. Oversized or numerous signs increase costs to the developer. These guidelines suggest reducing the number and size of signs. In doing this, the cost to the developer will be reduced. If, on the other hand, each development competes visually with its neighbor, more signage and therefore greater costs will be the result. Towns may consider allowing businesses to defer the costs of rehabilitating existing signs until their repair or replacement would otherwise be needed.

Building Design

The guidelines in this section emphasize the use of simple, vernacular elements and materials traditionally found on Cape Cod structures. For this reason, the cost of wood frame construction should not significantly increase as a result of following these guidelines. In large scale commercial developments, however, the use of smaller masses and accessory structures will undoubtedly require additional up-front investment by the developer. Chain stores seeking to expand their business to Cape Cod must recognize that their standard building plans may be visually incompatible with the existing, smaller-scaled, historic architecture. Part of the price of doing business on the Cape will be to develop a recognizable building design that is adapted to the overall visual environment rather than in competition with it.

Depending on the extent of alteration required, the costs of reusing a building (historic or otherwise) may exceed the cost of new construction. However, adaptive reuse costs often fall within the range of new construction costs. Adaptive reuse projects may also be eligible for several funding sources such as historic or low income housing tax credits to offset costs. In particular, preservation of existing historic buildings adds value to these structures as well as surrounding neighborhoods.

The guidelines regarding infill construction emphasize the use of simple vernacular forms and materials which do not significantly increase cost while adding value to the property and surrounding structures. Encouraging backlot development also can increase the value of underutilized property.

Vernacular Cape Cod architecture should serve as a reference for all new construction

Summary

Overall, the costs of implementing the design guidelines will vary greatly from project to project because of specific and unique conditions. In some cases, costs will increase, while in others cost savings will result. Overall, however, Cape Cod will benefit economically by reflecting its unique character and by maintaining and improving its attractiveness as an environmentally-focused resort community. In addition, in many cases costs can be shared by towns, regional and state agencies, or phased over time to reduce the burden on a community or developer. (Refer also to the Resources Section for a list of grant and loan programs to help defray the costs of development.)

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Washington, D.C. 20035-6118

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Federal Funding Sources:

Note: Eligibility of applicants will vary from source to source; some fund only government agencies, while non-profit organizations are targeted for other programs. Many of these funds are available on a matching basis only.

Community Development Block Grants - Entitlement Program
Department of Housing and Urban Development
Community Planning and Development

Eligible types of projects: Neighborhood revitalization, economic development, and provision of improved community facilities and services. All eligible activities must benefit low and moderate income persons, aid in the prevention or elimination of slums and blight, or meet other community development needs having a particular urgency. Several Rail-trail projects have been awarded funding through this program.

Land and Water Conservation Fund
Department of the Interior
National Park Service

Eligible types of projects: Acquisition, development, or rehabilitation of neighborhood, community or regional parks, or facilities supporting outdoor recreation activities.

Rivers, Trails and Conservation Assistance Program
Department of the Interior
National Park Service

Eligible types of projects: Provides staff assistance for river, trail and conservation projects. Selected projects have included conceptual plans for trail corridors, river corridor plans, and statewide river assessments. Projects are selected if they protect significant resources, achieve tangible results, incorporate public involvement during the planning process and service a large number of people.

Urban Park and Recreation Recovery Program
Department of the Interior
National Park Service

Eligible types of projects: Rehabilitation grants for existing urban recreation sites. Projects may include rebuilding, remodeling, expanding or developing existing outdoor or indoor recreation areas and facilities. Funds may be used to improve park landscapes, buildings and support facilities, but are not available for routine maintenance activities.

Acquisition of Flood Damaged Structures
Federal Emergency Management Agency

Eligible types of projects: Structures that have been repetitively and substantially damaged by floods. Property must be located in FEMA flood-risk area and covered under National Flood Insurance Program. Community must be willing to accept title to the property and restrict its use in perpetuity to open space.

Highway Planning and Construction (Federal Aid Highway Program)
Federal Highway Administration

Eligible types of projects: Bicycle transportation, pedestrian walkways, rest areas and fringe or corridor parking facilities as part of highway beautification projects.