

FINAL DRAFT

TOWN OF

HARWICH

COMPREHENSIVE

PLAN

November 2, 1993

TOWN OF HARWICH COMPREHENSIVE PLAN

INTRODUCTION

THE FOLLOWING IS THE MASTER PLAN FOR THE TOWN OF HARWICH. IT HAS BEEN WELL-RESEARCHED, REVISED, AND REFINED. IT IS PUT FORTH TO THE CITIZENS OF HARWICH, NOT AS THE FINAL STEP IN PLANNING FOR THE FUTURE BUT AS THE FIRST. ADOPTION OF THIS DOCUMENT AS A COMPREHENSIVE PLAN AS A WHOLE AT TOWN MEETING IS NOT THE IMMEDIATE ADOPTION OF ITS PARTS. EACH PART OF THE PLAN WILL BE THE SUBJECT OF ADDITIONAL PUBLIC HEARINGS, BOARD MEETINGS AND IN MANY CASES, MOST NOTABLY ZONING CHANGES, FURTHER VOTING ON THE TOWN MEETING FLOOR. THIS IS A FLUID DOCUMENT; A FRAMEWORK FOR THE FUTURE. THE IDEAS ARE PRESENTED AS DIRECTIONS FOR THE TOWN. ULTIMATELY, THE TOWN'S DESTINATION WILL BE DECIDED BY THE VOTING RESIDENTS OF HARWICH.

SPECIAL NOTES

1. This comprehensive plan incorporates by reference the goals and policies of the Cape Cod Commission Regional Policy Plan (RPP) unless contrary to the provisions of this plan, in which case, the provisions of this comprehensive plan shall control. However, all goals, minimum performance standards, and other policies of the RPP which are specifically for Developments of Regional Impact (DRI's), are not included in this plan by this or any other reference. Such provisions are intended to be administered solely by the Cape Cod Commission and would be inappropriate to apply to projects smaller than DRI's.
2. In some circumstances, property subject to regulation may be left with no remaining reasonable use due to the application of one or more of the requirements developed in the implementation of this plan, including those related to the Regional Policy Plan as incorporated in note 1 above. In such cases, the applicable local permitting authority may modify the application of such standards without substantially derogating from the intent and purpose of this plan, provided that the maximum practical compliance with the subject requirement(s) has been demonstrated. All Harwich agencies having a regulatory role in implementing the provisions of this plan should incorporate appropriate administrative provisions into their regulations or by-laws to accommodate such situations.
3. This plan shall be updated every five years or sooner as deemed necessary by the Harwich Board of Selectmen and Planning Board.

MISSION STATEMENT

HARWICH COMPREHENSIVE PLAN

11/2/93

This plan sets forth a framework of policies and recommendations to guide future growth, development and re-development in Harwich. It is intended to be a working guidance document for all town agencies charged with making decisions on behalf of the Town. As town agencies need to set policies and determine their courses for the future, they may use this plan, as adopted and amended, to render decisions with a working knowledge of the directions the Town has set for itself regarding Land Use, Natural Resources, Recreation, Housing, Community Facilities and Services, and Historic Preservation and Community Character.

This plan will also serve as a reference document for residents and property owners. Readers may turn to the plan to know what to expect in the way of future growth and regulations, how the Town will address existing and projected issues, and what measures will be used to maintain or improve the quality of life in Harwich.

The four most prevalent principles utilized in the formation of this plan are as follows:

- 1) Harwich is a wonderful town to live in with many natural and man-made assets worth preserving and enhancing.
- 2) Due to the Town's location within a scenic but vulnerable natural environment and the direct linkage between economic vitality and environmental quality, growth should not exceed the ability of the Town to adequately manage its impacts.
- 3) There are many identified needs in Harwich which must compete with each other for finite resources. It is therefore necessary to seek a balance in addressing these needs.
- 4) In the implementation of land use policies, regulatory and other measures must, to greatest practical extent, create realistic incentives for adherence to the policies of this plan.

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ABBREVIATIONS FOR TOWN AGENCIES/AGENTS/EVENTS

AAB	-	Architectural Advisory Board
ATM	-	Annual Town Meeting
BA	-	Board of Assessors
BAMC	-	Brooks Academy Museum Commission
BD	-	Building Department
BPSC	-	Bike Path Study Committee
BOH	-	Board of Health
BOS	-	Board of Selectmen
BR	-	Board of Registrars
BWC	-	Board of Water Commissioners
CACAH	-	Citizens Advisory Committee on Affordable Housing
CC	-	Cemetery Commission
CCC	-	Cape Cod Commission
CCSC	-	Community Center Study Committee
COA	-	Council on Aging
COC	-	Capital Outlay Committee
ConC	-	Conservation Commission
(COT)	-	Committee on Tourism
DRC	-	Disability Rights Committee
DHM	-	Division of Highways and Maintenance
(EEC)	-	Economic Enhancement Council
FC	-	Finance Committee
FD	-	Fire Department
GC	-	Golf Commission
HA	-	Housing Authority
HC	-	Historical Commission
HDC	-	Historic District Commission
HM	-	Harbormaster
(IPC)	-	Industrial Park Commission
LAC	-	Land Acquisition Committee
MDPW	-	Massachusetts Department of Public Works
PeBd	-	Personnel Board
PB	-	Planning Board
PD	-	Police Department
(PTC)	-	Public Transportation Committee
RC	-	Recycling Committee
RYC	-	Recreation and Youth Commission
SfC	-	Shellfish Constable
TAc	-	Town Accountant
TAd	-	Town Administrator
TBFL	-	Trustees of Brooks Free Library
TC	-	Town Council
TCO	-	Town Clerk's Office
TE	-	Town Engineer
TW	-	Tree Warden
(TSC)	-	Traffic Safety Committee
TT	-	Town Treasurer
WWC	-	Waterways Committee
ZBA	-	Zoning Board of Appeals
()	-	Recommended Agency

Issues Summary

The content of this plan is a carefully considered response to many important land use issues. Chief among the issues is the fact that all land in the Town of Harwich is zoned for some kind of development. Over 2,000 residential building lots currently exist for which there are no regulations to prevent building of dwellings on them. Another 975 lots may be created by the subdivision of vacant or not fully developed land. This is fewer than 10% of all potential dwelling units possible at full development of the Town under current zoning. This means that even dramatic changes to subdivision and residential zoning requirements would yield few results relative to the patterns of development already established and the need to mitigate the negative impacts of such patterns.

Certain resources such as the four harbor areas and one public wellfield, are threatened by excessive nutrient loading at full development. Many of the existing building lots are within the groundwater recharge areas to these resources, leaving few mitigation options other than outright acquisition of these lots which would be very costly.

Other natural resources such as extensive natural areas (open space), ponds, wetlands, and wildlife are also threatened by the full realization of all the development that existing zoning would permit. In addition, scenic landscapes, historic structures, an architectural heritage, and other aspects which form the unique character of each of the seven villages of Harwich are threatened by the individual and cumulative effects of changes which may occur very suddenly at the parcel level with little opportunity to affect the resulting appearance of these changes.

Regarding development patterns, the Town's current zoning mandates continued sprawl of residential development so as to consume all remaining unprotected or undedicated open space. Commercial development would be allowed to occur along nearly all the frontage of Route 28 through West Harwich, Harwich Port and South Harwich. Such dispersal of commercial facilities would mandate continued dependence on the automobile, erode the visual character of the three villages, spread-out traffic congestion, discourage pedestrian and bicycle trips to businesses, and generally produce yet another monotonous strip of buildings, signs, driveways, and parking.

Based on the analyses of economic characteristics found in Section VIII of the data gathering phase, the total potential for commercial space at build-out closely matches the projected demand (at build-out) for commercial uses. Therefore, no reduction of total commercial potential is proposed. Instead, better management of growth potential is recommended.

Another important issue raised by the many citizens who addressed the Board during the data gathering phase of this plan, is that of maintaining Harwich's small town character. There was also significant input from the business community to provide a more

positive climate for business. Other feedback indicates a strong interest in providing enough affordable housing, walking trails, open space, shellfishing areas, etc.

Specific details on the background research and findings regarding land use issues can be found in Section VI, Existing Land Use, compiled during the data gathering phase of this plan. A summary of these findings can be found in a document entitled "Technical Findings Summary", dated March 11, 1993. Both documents are on file in the Harwich Planning Department.

Overview of Recommendations

In order to address as many of the important issues as possible, and be consistent with the concepts of the Cape Cod Commission's Regional Policy Plan, the Land Use component of the Comprehensive Plan incorporates the following key concepts:

1. Adoption of a "no net change" philosophy in terms of ultimate population and commercial space potential. This reflects a desire by the Planning Board to achieve a win/win outcome for the Town and property owners such that the former can encourage the cooperation of the latter in achieving the Town's planning goals without placing an undue burden on property owners. This approach requires managing growth by shifting development pressure from sensitive to less sensitive areas through incentives and reasonable regulations.
2. Recognition that change and growth are natural components of a healthy and vital community; that working with and managing such growth for the optimum benefit would be more appropriate than attempting to stop it; that maintaining and enhancing the tax base is an interest shared by every resident; and that overall property values are directly related to the quality of the Town's scenic, natural and cultural resources.
3. Establishment of seven growth centers; four for mixed commercial and residential usage and three for industrial and other job-producing activities.
4. Enhancing the village atmosphere of existing activity centers by allowing more residents to live near and help support area businesses.
5. Guiding development pressure to the growth centers by allowing the transfer of development rights from outlying commercial and residential areas to certain growth centers. Such a shift of development activity would help relieve specific natural resources of the threats of excessive development activity. It will also help prevent the complete sprawl of residential and commercial development throughout the Town.
6. Providing for adequate public facilities and amenities in the growth centers to aid their vitality as this would enhance their desirability as a destination.
7. Providing realistic incentives for:
 - inclusion of affordable housing in new development and redevelopment.
 - design of new construction that is compatible with the existing character in each village, especially where historic resources are concentrated.

- clustering of new residential development to preserve permanent open space and wildlife habitat.
- transfer of development rights between two parcels.

Relation to Other Sections

The Land Use section shares an integral relationship with all of the other sections of this plan. It is formulated to support or complement the goals and recommendations throughout the document. It appears first in the Plan to set the context for the other sections but it was formulated after careful consideration of the issues in the other sections. Since the Plan will not always be consulted in its entirety, some of the recommendations in the Land Use section are repeated in other sections which focus on similar subject matter.

Technical Aspects

The following are explanations of some of the key terms and concepts which appear in this section:

Affordable housing - Housing which is subsidized for a long term so as to be affordable for rental or owner occupancy by households which earn less than the Harwich median household income, especially those with incomes at or below 80% of the Harwich median household income.

Best management practices - A collection of the most practical and up-to-date approaches to managing the disposal of storm water

Betterment assessments - Assessments to individual property owners within a defined betterment district to pay for special public improvements which enhance the value of property in the district.

Assessments would be in addition to real estate taxes.

Cluster development - The creation of building lots for homes or businesses whereby the same number of lots allowable by conventional subdivision are created in a development but the lot area and frontage is reduced so that the land left over can become permanent open space or other common area.

Denitrifying sewage treatment/septic facilities - Sewage treatment facilities, either serving a single parcel or an entire area, which significantly reduce the levels of nitrate-nitrogen in the wastewater prior to discharge into the ground water.

Environmentally sensitive area - A natural resource area such as a pond, public wellfield, wetland, beach, dune, coastal bank, designated Area of Critical Environmental Concern (ACEC), steeply sloping area, rare wildlife habitat, or an area through which precipitation ultimately recharges a surface water body or public wellfield.

Gateway area - An area at the fringe of a special place such as the Town of Harwich itself or any of its growth centers, along a major road which provides access to the special place. The purpose of a gateway is to draw visitors' attention to their arrival at the special place and is typically decorated with an aesthetically pleasing symbol, sign, display and/or arrangement of materials such as plantings, fence sections, statues, pillars, stone walls, etc.

Greenhouse agriculture - Cultivation of cash crops within greenhouses so as to extend/maximize the growing season.

Ground watershed - The total area of contribution of ground water to its outlet.

Growth Center

- a. Local commercial/residential - An area with definite boundaries in which growth to serve local demand is preferred, encouraged and

supported, within appropriate limits to be established under zoning, so as to establish and maintain attractive, compact, and vital places for business, leisure and residence.

- b. Local and regional commercial/residential - Same as (a) above but with an allowance for commercial uses of a regional nature.
- c. Small scale residential/commercial - Same as (a) above but with an emphasis on encouraging small scale businesses and lodging within existing structures.
- d. Industrial - An area in which industrial growth, including one or more industrial park(s) is encouraged and supported, within appropriate limits established by zoning where industry supported by the local economy can grow, prosper, and provide employment opportunities for local residents.
- e. Economic - An area similar to (d) above but which, due to its unique access to a regional transportation corridor, also encourages the establishment of large-scale, regional land uses, within appropriate limits to be established under zoning, so as to optimize the enhancement of the nonresidential tax base and provide employment opportunities for Harwich residents.

Infill - Development, either residential, commercial, or industrial which occurs within and between already developed and partially developed parcels.

Mixed uses - Commercial and residential uses in an area where buildings and or parcels are shared by both use types.

Multi-unit residential - Any residential land use which involves three or more dwelling units, either attached to each other, in detached structures, or integrated within a commercial structure, on an individual parcel of land.

Recharge Areas - The land area that contributes storm runoff, irrigation water and septic discharges to a specified resource such as a well, pond, or harbor.

Transfer of Development Rights; Transferable Development Rights

(TDR) - The existing rights under zoning to build residential or commercial structures which, instead of being built on the land where the rights currently exist, can be transferred to other parcels in the same areas or in completely different areas of town.

TDR receiving zones - Designated areas which are either growth centers or relatively less susceptible to degradation by development than sending areas.

TDR sending zones - Designated areas which, due to their relative sensitivity to degradation by development, may transfer rights to build to one or more other areas of town.

Transitional uses - Land uses which serve to buffer high intensity uses from low intensity uses. For example, multi-unit residential would serve as a transitional use between commercial and detached, single-family residential uses.

Village-style development patterns - Patterns of development which are adjacent to a confined commercial area and exhibit a relatively consistent scale, form, and spacing of buildings and placement of parking facilities.

Zoning bonuses - The granting during the development review process of additional development capacity such as more site coverage or fewer parking spaces than required, in exchange for provision of a public benefit or amenity and/or advancement of a goal in this plan.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Land Use/Growth Management goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91), except as provided below. Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

RPP Minimum Performance Standard 1.1.3 -

Extension or creation of new roadside "strip" commercial development outside of designated growth centers shall be prohibited.

Reason for Inconsistency - While the transfer of development rights proposed herein would shift some of the commercial potential away from the strip zoned areas along Route 28, it would not provide for the shifting of all the potential. In fact, the public feedback on the TDR and growth center concepts resulted in a significant reduction of the capacity of the commercial rights receiving areas such that strip style development would need to occur. One of the underlying and guiding principles of this plan is the preservation of equity in property rights. Even if some downzoning were to be implemented along Route 28 to reduce the overall potential, the nature of parcels in and the configuration of the existing strip zoned areas will continue to mandate a strip development pattern for commercial uses. Therefore, the prohibition of strip development outside of designated growth centers would be inconsistent with this plan and impractical to implement.

In addition, a question was raised by the Commission about the advisability of accommodating all of the potential commercial and residential growth relative to various impacts. The Planning Board has determined that town acquisition of property rights would be the only truly successful way to reduce population and commercial development potential. (Both would need to be reduced due to the good supply/demand match found between build-out population and build-out commercial space potential (see Section VII, Economic Characteristics)). However, the cost of such acquisitions would be unlikely to be approved by Town voters. Instead of reducing development potential, this plan seeks to manage future growth by shifting the geographic location of development to areas with the least relative environmental sensitivity and mitigating the impacts of growth with appropriate on-site facilities, infrastructure, traffic management, incentives for compatible building design, and density controls.

1.1.0

Goals

1.1.1

To maintain and enhance the Town's small town atmosphere and quality of life.

1.1.2

To allow moderate growth and development consistent with the carrying capacity of Harwich's natural environment.

- 1.1.3 To limit land use intensity in designated low-growth areas so as to avoid the need for public or private sewage collection and treatment facilities in such areas.
- 1.1.4 To discourage high intensity uses in locations where such uses would be contrary to the goals and objectives of this plan.
- 1.1.5 To encourage the preservation and enhancement of existing village centers and commercial areas that provide a pleasant environment for living, working and shopping for residents and visitors.
- 1.1.6 To provide and maintain appropriate recreational facilities.
- 1.1.7 To maintain or improve the Town's tax base.
- 1.1.8 To provide a variety of housing types, residential densities, and neighborhoods in order to maintain social diversity in the Town.
- 1.1.9 To provide for the appropriate use of land within the Town so as to best meet the needs of residents, businesses and visitors with an emphasis on protecting and enhancing the Town's assets.
- 1.1.10 To eliminate or minimize the Town's land use liabilities and conflicts.
- 1.1.11 To preserve and enhance agricultural uses that are environmentally compatible with Harwich's natural resources in order to maintain the productive and scenic values associated with agricultural lands.
- 1.1.12 To promote public safety and well being.
- 1.2.0 Recommendations
- 1.2.1 Limit the Town's year-round residential capacity (based on dwelling units) to 20,000 residents by maintaining a balance in land use capacity. This limit shall include residents in affordable housing.

(I) Implementation Considerations

Any land use proposals seeking to increase residential density of a parcel or area beyond that which is called for in the Zoning By-Law must be off-set by voluntary development restriction of developed land, land acquisition, regulatory adjustment of development potential, or other means to achieve a compensating reduction in potential population. Under no circumstances shall this provision serve to limit the Town's ability to offer reasonable density bonuses for the creation of affordable housing.

Key Agencies

ATM, PB, ZBA, TC

Timing

Adopt language in Zoning By-Law to accommodate this principle by 1996. Implementation to be ongoing up to or through next plan update five years from adoption.

1.2.2

Develop and implement a Transferable Development Rights (TDR) program which establishes a process for the sale and purchase of development potential between parcels so that any rights sold from a parcel (A) permanently preclude the exercise of those development rights on that parcel and a parcel which has acquired the rights that were sold (parcel B) may develop the purchased rights in addition to rights already in existence under the Zoning By-Law. Generally, the areas where full development under 1993 zoning would be contrary to the goals or policies of this plan, should be designated as sending zones (where TDR's are sold) and mixed use growth centers should be the receiving zones (where purchased rights can be constructed). Allowance for transfer of development rights between any two parcels (i.e. not necessarily involving land in a growth center) under a special use permit should be included, provided that issuance of the permit is otherwise consistent with the goals or policies of this plan. See TDR Map, Figure 1.1.

(I)

Implementation Considerations

Town meeting will need to adopt a detailed Zoning By-Law amendment to provide for the transfer of development rights. Such a system must include provisions to maintain taxable values, accommodate higher intensity development in receiving areas, prioritize the sending areas from which development rights are obtained, recognize and compensate for difference in property values, and administer the system in an objective and equitable manner. Legal expenses will likely be necessary for the development and administration of a TDR program.

Key Agencies

ATM, BOS, PB, TC, BA

Timing

Adopt appropriate provisions by 1996.

1.2.3

Designate the following locations as growth centers:

1.2.3.1

East Harwich - Local and Regional commercial growth center within the existing boundaries of the CH-2 commercial zone. Residential growth within CH-2 zone and along the perimeter of the zone as a transitional area. The proposed boundaries are shown on Figure 1.2.

(I)

Implementation Considerations

Amend Zoning By-Law and Map to designate prescribed area as a growth center.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

1.2.3.1.a

Allow for large-scale, low-water-use, regional and local commercial facilities within the core of the CH-2/WR area, provided nitrate-nitrogen loading will not be permitted to exceed 5 parts per million in the WR portion of this growth center; permit same in non-WR area except omit water use limitation, establish nitrate-nitrogen

loading standard at a maximum of 10 parts per million, and permit mixed use development which would include multi-unit residential. Water use limitation would not apply in CH-2/WR area if denitrifying sewage/septage treatment facilities are provided.

(I) Implementation Considerations

Amend Use Table in Zoning By-Law to provide for both large- and small-scale facilities in the CH-2 zone while excluding the larger ones from other commercial areas (except Pleasant Lake regional growth center). Amend Use Table to include appropriate provisions for multi-unit residential uses either separate from or together with small-scale commercial uses. The larger scale uses should be established within the central core of the growth center while the small-scale, local uses should occur along the periphery of the area.

Key Agencies

ATM, PB, TC, BOH

Timing

Adopt appropriate provisions by 1996.

1.2.3.1.b Establish a residential TDR receiving zone along the fringes of the CH-2/WR zone areas and permit multi-unit housing to serve as a transitional use between the commercial and single-family residential zones.

(I) Implementation Considerations

In amending the Zoning By-Law pursuant to 1(a) above, incorporate a density limit, bulk requirements, zoning map change, etc., to facilitate multi-unit housing along outer edges of the CH-2 zone, possibly expanding slightly the area for residential use, where appropriate. Buffering requirements would also be included.

Key Agencies

ATM, PB, TC, BOH

Timing

Adopt appropriate provisions by 1996.

1.2.3.1.c Design and construct adequate pedestrian/bicycle/transit facilities, including sidewalks, bike lanes, taxi stand and bus stop(s).

(I) Implementation Considerations

Appropriate funds to design improvements with consideration of betterment assessments to partially fund such work. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act).

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

1.2.3.1.d Acquire adequate rights-of-way to accommodate necessary widening of Routes 137 and 39 for traffic flow, safety, and drainage improvements. Allow adequate room for attractive gateway areas on Routes 137 and 39 at the fringes of the commercial zone, including signs that state, "East Harwich Village Center." Also provide for gateways at the ends of the Route 6 off-ramps at Route 137. Such facilities should also attractively consolidate the various signs in these areas.

- (I) Implementation Considerations
Appropriate funds to design necessary improvements as determined by a traffic safety committee (TSC) to be appointed by the BOS. Design work could be partially funded by betterment assessments. Secure inclusion of acquisition project in the County's TIP so as to be eligible for ISTEA funding. Complete acquisition as soon as funds can be made available. See also Section 7.2.1.1 and implementation considerations under Section 1.2.3.5.h.

Key Agencies

ATM, BOS, (TSC), TE, TC, BA, CCC, DHM, PD

Timing

Complete acquisition as soon as possible to minimize cost.

1.2.3.1.e Construct widening improvements for Routes 137/39 within the commercial zone as provided in Community Facilities section when average daily traffic volume passes 17,000 vehicles per day or as warranted by prevailing conditions.

- (I) Implementation Considerations
Secure inclusion of construction project in the County's TIP so as to be eligible for ISTEA funding. Bonding of local share may be necessary. Local share should be partially funded by betterment assessments. See also Section 7.2.1.1.

Key Agencies

ATM, BOS, (TSC), TE, TC, BA, CCC, DHM

Timing

Program work to coincide with traffic volume on Route 137 exceeding 17,000 vehicles per day or sooner, if warranted. Incorporate design, land acquisition and construction costs into capital outlay plan for completion by no later than the year 2000.

1.2.3.1.f Lay out secondary access roads between Routes 39 and 137 in the north, west, and south quadrants of the intersection of these roads. Said roads should be constructed with private funds when development occurs adjacent to them.

- (I) Implementation Considerations
To avoid construction on them prior to actual layout, designation of these roads should be made on a proposed roads map and included as an amendment to this plan. Property owners could be required by Zoning By-Law amendment to lay out and construct these ways for frontage for mixed use development.

Key Agencies

PB, TC, TE, (TSC), DHM, PD, ATM

Timing

Adopt future roads map as part of comprehensive plan in 1994. Adopt requirement for road construction in 1994.

1.2.3.1.g Permit mixed use in areas not fronting on Routes 137 and 39.

(I) Implementation Considerations

Amend Zoning By-Law to allow mixed use (residential and commercial) in areas outside the core area of the CH-2 commercial zone but within the general limits of the commercial zone. In southeast section of zone where supermarket exists, residential uses would not be permitted. Mixed uses would consist of apartments above commercial spaces or multi-unit apartment buildings adjacent to but buffered from large-scale commercial uses.

Key Agencies

ATM, PB, TC, BOH

Timing

Amend Zoning By-Law to include facilitating provisions by 1996. Amendment would permit such development only upon the provision of adequate on-site nitrogen-reducing sewage/septage treatment facilities.

1.2.3.1.h Specific storm drainage management standards should be developed and applied to new development in the growth center so as to dispose of contaminated storm runoff from roads and parking areas (but not roof runoff) using the best management practices for cleansing and disposing of storm water. Roof runoff should be allowed to recharge the groundwater through drywells and vegetated areas. Incentives for existing development to install appropriate systems should also be established.

(I) Implementation Considerations

The Town Engineer's office, Board of Health, and Planning Board should work together to develop the appropriate standards and seek to incorporate them into the most suitable development review procedures.

Key Agencies

TE, BOH, PB, TC

Timing

Develop regulations and incentives by 1996.

1.2.3.1.i Zoning bonuses should be offered to landowners for the contribution of open space for public ownership or use. Such bonuses should represent as much value as the fair market value of the open space contributed.

(I) Implementation Considerations

Amend Zoning By-Law to permit extra development intensity in exchange for dedication of public open space. Examples of such bonuses include the following:

1. Increase in permissible site coverage.
2. Permit third story within specified height limit.
3. Reduction of setbacks.
4. Reduction of parking requirement.
5. Waiver of interior landscaping requirement.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendment(s) by 1996.

- 1.2.3.1.j Require adequate buffering between regional commercial and multi-unit residential development and between multi-unit residential and single-family development.

- (I) Implementation Considerations
Amend Zoning By-Law to include appropriate standards.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendment(s) by 1996.

- 1.2.3.1.k Facilitate the construction of affordable housing for families, the elderly, disabled persons and persons with mental handicaps, with an ultimate affordable unit target of 7% of the total year-round housing stock (at build-out) in the East Harwich village.

- (I) Implementation Considerations
This will require the establishment of development bonuses and other incentives to leverage affordable units from development generated by the transfer of development rights into the growth center.

With regard to maintaining an ultimate population target of 20,000 people, any provision of density increases beyond what 1990 zoning would have permitted, will need to be offset by lands removed from developable status by virtue of deed restrictions or town acquisition. An accurate accounting system to keep track of the numbers of potential housing units and those allocated for bonuses will be needed.

Key Agencies

ATM, PB, TC

Timing

Begin work on developing appropriate incentives and programs upon adoption of this plan. Have regulatory framework in place by 1996.

- 1.2.3.1.l Design and construct streetscape beautification improvements such as promenades, ornate street lighting, street furniture, recycling bins, landscaping, public art, curbing, sidewalks, and special crosswalk treatments.

- (I) Implementation Considerations
Appropriate funds to design improvements with consideration of betterment assessments to partially fund such work. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act).

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

- 1.2.3.2 Harwich Port (Harwich Port Center) - Local commercial/residential growth center north and south of Route 28. The proposed boundaries are shown on Figure 1.3.

- (I) Implementation Considerations
Amend Zoning By-Law and map to designate prescribed area as a growth center.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendment(s) by 1996.

- 1.2.3.2.a Allow for mixed commercial/residential uses in buildings of a design and scale that are compatible with existing development.

- (I) Implementation Considerations
Amend Zoning By-Law to allow mixed residential and commercial uses on parcels within the growth center boundaries. Design consistency would be implemented through an incentive point system more fully detailed in section 13.2.2.1. May also involve establishment of an historic district to protect certain areas within the growth center.

Key Agencies

ATM, PB, TC, AAB, HC

Timing

Adopt necessary regulatory changes by 1996.

- 1.2.3.2.b Establish a residential and commercial TDR receiving area. Residential sending areas would include all properties within the recharge areas for Allen's Harbor and Wychmere/Saquatucket Harbors and along Route 28 east and west of the Harwich Port growth center, except the portion which lies west of the Herring River. Commercial sending areas would be all areas along Route 28 to the east of the Harwich Port growth center to the town boundary and west of the growth center to the Herring River. See TDR Map, Figure 1.1.

(I) Implementation Considerations

Within the growth center boundaries which represents an expansion of areas for commercial development, residential and commercial development rights would be permitted to be developed, provided that such rights developed in the expanded commercial area are rights transferred from an appropriate sending area. Where commercial and residential development rights already exist within the proposed growth center boundaries, such rights may be exercised pursuant to the prevailing Zoning By-Law and increased only upon purchase of development rights from an appropriate sending area.

Key Agencies

ATM, PB, TC

Timing

Adopt necessary regulatory changes by 1996.

1.2.3.2.c Permit multi-unit housing with adequate buffering from strictly commercial and single-family residential areas.

(I) Implementation Considerations

Amend Zoning By-Law to permit more than two dwelling units per parcel, up to 10 units per acre gross density, provided the development rights for such additional units are purchased from an appropriate sending area and adequate nitrate-nitrogen removal can be provided. Buffering standards would need to be added to the By-Law.

Key Agencies

ATM, PB, TC

Timing

Adopt amendments by 1996.

1.2.3.2.d Set aside a site for area-wide storm drainage system outfall to divert and cleanse existing direct discharges into wetlands and waterways.

(I) Implementation Considerations

A parcel or parcels would need to be acquired to provide for proper treatment and disposal of stormwater collected from Route 28. An alternative to this approach would be the provision of cleansing chambers on the ends of the outfall pipes to reduce or eliminate bacteria, hydrocarbons and other pollutants from the stormwater before it enters the harbors. A concerted lobbying effort will be necessary to have the Massachusetts Department of Public Works (MDPW) fund the implementation of whichever alternative is most viable due to its role in maintaining Route 28.

Key Agencies

BOS, TC, MDPW, TE, BOH, ConC

Timing

Should be commenced following adoption of this plan.

1.2.3.2.e Design and construct adequate pedestrian/bicycle/transit facilities, including sidewalks, bike lanes, taxi stand and bus stop.

- (I) Implementation Considerations
Appropriate funds to design improvements. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act).

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

1.2.3.2.f Design and construct streetscape beautification improvements such as promenades, ornate street lighting, street furniture, recycling bins, landscaping, public art, curbing, sidewalks and special crosswalk treatments.

- (I) Implementation Considerations
Appropriate funds to design improvements with consideration of betterment assessments to partially fund such work. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act). Coordination with MDPW will be necessary as this agency has jurisdiction over Route 28 improvements.

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD, MDPW

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

1.2.3.2.g Work with the State to expedite design and construction of traffic safety improvements along Route 28.

- (I) Implementation Considerations
Design alternatives for Route 28 improvements will need to be pursued by the proposed Traffic Safety Committee (TSC), using data and findings compiled by the Route 28 Corridor Study conducted by Cape Cod Commission and MDPW. The TSC would need to work with the CC Commission to incorporate any design and/or construction projects into the County Transportation Improvement Program (TIP) so as to make them eligible for ISTEA funding. Hiring of a consultant to work with the TSC may be necessary.

Key Agencies

ATM, BOS, (TSC), PD, TC, CCC, DHM, MDPW

Timing

Implementation should begin as soon as plan is adopted.

- 1.2.3.2.h Facilitate the construction of affordable housing for families, the elderly, disabled persons and persons with mental handicaps, with an affordable unit target of 7% of the total year-round housing stock (at build-out) in the Harwich Port village.

(I) Implementation Considerations

This will require the establishment of development bonuses and other incentives to leverage affordable units from development generated by the transfer of development rights into the growth center.

With regard to maintaining an ultimate population target of 20,000 people, any provision of density increases beyond what 1990 zoning would have permitted, will need to be offset by lands removed from developable status by virtue of deed restrictions or town acquisition. An accurate accounting system to keep track of the numbers of potential housing units and those allocated for bonuses will be needed.

Key Agencies

ATM, PB, TC

Timing

Begin work on developing appropriate incentives and programs upon adoption of this plan. Have regulatory framework in place by 1996.

- 1.2.3.2.i Acquire necessary easement(s) where insufficient right-of-way exists along Route 28 to provide an identifying gateway, including signs stating, "Harwich Port Village Center".

(I) Implementation Considerations

Appropriate funds or seek donations from community service organizations to establish appropriate signage, symbols, decorations, etc., to identify an entry way into the growth center. A gateway design committee could be appointed by the Board of Selectmen and charged with the responsibility of developing an acceptable design. If adequate right-of-way is lacking due to roadway and sidewalk coverage, then easements would need to be secured through a Town Meeting appropriation. Coordination with MDPW will be necessary since Route 28 is a State highway.

Key Agencies

BOS, ATM, MDPW, TC, TE, DHM

Timing

While immediate implementation is not critical, the processes for securing permission from the State and selecting a gateway design should be initiated by 1996 and any town appropriations should be programmed for implementation prior to the year 2000.

1.2.3.2.j Provide for adequate buffering and transitional uses between the growth area and surrounding nongrowth areas.

(I) Implementation Considerations

Amend Zoning By-Law to include appropriate standards. Amendments should include provisions for medium density multi-unit residential uses along the fringes of the growth center so as to provide a transition between the mixed use commercial/residential development and the bordering single-family neighborhoods.

Key Agencies

ATM, PB, TC

Timing

Adopt regulatory changes by 1996.

1.2.3.2.k Establish maximum front building setback of 15 feet wherever commercial development is permitted in the growth center and prohibit parking within 25 feet of any street.

(I) Implementation Considerations

Amend Zoning By-Law to specify these requirements. Such action is expected to enhance the viability of commercial parcels, enhance the visual quality of the commercial center, and establish a more pedestrian-oriented pattern of development. The proposed setbacks would achieve the same objectives throughout the growth center (wherever commercial uses would be permitted) and should be considered for such areas along with Route 28.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

1.2.3.3 West Harwich - Small scale residential and commercial growth center north and south of Route 28 between Division Street and Riverside Drive. The proposed boundaries are shown on Figure 1.4.

(I) Implementation Considerations

Amend Zoning By-Law and Map to designate prescribed area as a growth center.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

1.2.3.3.a Allow for concentration of medium-scale commercial and residential development, except for high water use commercial activities such as large restaurants and laundromats, unless adequate on-site denitrifying septic facilities are provided. In no case should large-scale structures or uses be established in this area.

- (I) Implementation Considerations
Identify necessary changes in the definitions and the use and bulk tables of the Zoning By-Law and amend it accordingly so as to facilitate and encourage the types of development desired. Density limits for residential development should be specified in the By-Law.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning amendments by 1996.

- 1.2.3.3.b Establish residential TDR receiving zone to accommodate development potential from all vacant residentially zoned parcels in West Harwich.

- (I) Implementation Considerations
Within the growth center boundaries, additional residential development rights would be permitted to be developed, provided that such additional rights have been transferred from an appropriate sending area. Residential development rights which already exist within the proposed growth center boundaries may be exercised pursuant to the prevailing Zoning By-Law and increased only upon purchase of development rights from an appropriate sending area.

Key Agencies
ATM, PB, TC

Timing
Adopt necessary regulatory changes by 1996.

- 1.2.3.3.c Establish and incorporate a lodging unit equivalent for residential TDR's and encourage small-to-medium size lodging facilities.

- (I) Implementation Considerations
Define method for equating dwelling units with lodging units using such characteristics as construction costs, market value, and annualized sewage output. Such method should be included in any TDR provisions of the Zoning By-Law so as to facilitate the conversion of residential unit development rights to lodging unit development rights. Amend Zoning By-Law to include appropriate provisions for TDR conversion and to provide other incentives for the establishment of small-to-medium lodging facilities in an amount up to a prescribed total number of lodging units

Key Agencies
ATM, PB, TC

Timing
Adopt zoning amendments by 1996.

- 1.2.3.3.d Design environmentally sound storm drainage collection and filtration system to serve existing and future development.

(I) Implementation Considerations

Appropriate funds to hire a consultant to prepare a comprehensive storm drainage plan for property owners and the State and Town to implement as the growth center fills in. An option would be to have the Town's Engineering Department do this work but this may take longer. Any design and construction costs could be supplemented by betterment assessments and/or impact fees.

Key Agencies

ATM, TE, BOH, ConC, PB, DHM, MDPW

Timing

Work should commence within one year of adoption of this plan so that any regulatory changes needed can be adopted by 1996.

- 1.2.3.3.e Design and construct adequate pedestrian/bicycle/transit facilities, including bike lanes, sidewalks, taxi stands and bus stops.

(I) Implementation Considerations

Appropriate funds to design improvements. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act).

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

- 1.2.3.3.f Work with the State to expedite design and construction of traffic safety improvements along Route 28.

(I) Implementation Considerations

Design alternatives for Route 28 improvements will need to be pursued by the proposed Traffic Safety Committee (TSC), using data and findings compiled by the Route 28 Corridor Study conducted by Cape Cod Commission and MDPW. The TSC would need to work with the CC Commission to incorporate any design and/or construction projects into the County Transportation Improvement Program (TIP) so as to make them eligible for ISTEA funding. Hiring of a consultant to work with the TSC may be necessary.

Key Agencies

ATM, BOS, (TSC), PD, TC, CCC, DHM, MDPW

Timing

Implementation should begin as soon as plan is adopted.

- 1.2.3.3.g Design and construct appropriate streetscape beautification improvements such as promenades, ornate street lighting, street furniture, recycling bins, landscaping, public art, curbing, sidewalks and special crosswalk treatments.

- (I) Implementation Considerations
Appropriate funds to design improvements with consideration of betterment assessments to partially fund such work. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act). Coordination with MDPW will be necessary as this agency has jurisdiction over Route 28 improvements.

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD, MDPW

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

- 1.2.3.3.h Facilitate the construction of affordable housing for families, the elderly, disabled persons and persons with mental handicaps, with an affordable unit target of 7% of the total year-round housing stock (at build-out) in the West Harwich village.

- (I) Implementation Considerations
This will require the establishment of development bonuses and other incentives to leverage affordable units from development generated by the transfer of development rights into the growth center.

With regard to maintaining an ultimate population target of 20,000 people, any provision of density increases beyond what 1990 zoning would have permitted, will need to be offset by lands removed from developable status by virtue of deed restrictions or town acquisition. An accurate accounting system to keep track of the numbers of potential housing units and those allocated for bonuses.

Key Agencies

ATM, PB, TC

Timing

Begin work on developing appropriate incentives and programs upon adoption of this plan. Have regulatory framework in place by 1996.

- 1.2.3.3.i Acquire necessary easement(s) where insufficient right-of-way exists along Route 28 to provide identifying gateway, including signs stating, "West Harwich Village Center". Also provide for a gateway to the Town as a whole at the Town boundary area along Route 28.

- (I) Implementation Considerations
Appropriate funds or seek donations from community service organizations to establish appropriate signage, symbols, decorations, etc., to identify an entry way into the growth center. A gateway design committee could be appointed by the Board of Selectmen and charged with the responsibility of developing an acceptable design. If adequate right-of-way is lacking due to roadway and sidewalk coverage, then easements would need to be secured through a Town Meeting appropriation. Coordination with MDPW will be necessary since Route 28 is a State highway.

Key Agencies

BOS, ATM, MDPW, TC, TE, DHM

Timing

While immediate implementation is not critical, the processes for securing permission from the State and selecting a gateway design should be initiated by 1996 and any town appropriations should be programmed for implementation prior to the year 2000.

- 1.2.3.3.j Provide for appropriate buffering and transitional uses between the growth area and nongrowth areas.

(I) Implementation Considerations

Amend Zoning By-Law to include appropriate standards. Amendments should include provisions for medium density multi-unit residential uses along the fringes of the growth center so as to provide a transition between the mixed use commercial/residential development and the bordering single-family neighborhoods.

Key Agencies

ATM, PB, TC

Timing

Adopt regulatory changes by 1996.

- 1.2.3.4 North Harwich - Industrial growth centers within limits of existing industrial zones. The proposed boundaries are shown on Figures 1.5 and 1.6.

(I) Implementation Considerations

Amend Zoning By-Law and Map to designate prescribed areas as growth centers.

Key Agencies

ATM, PB, TC

Timing

Adopt amendments by 1996.

- 1.2.3.4.a Allow for infill of industrial zones and provide for setting aside of marginal industrially zoned land for future use if needed. Marginal areas are shown on the Industrial Growth Center Maps, Figures 1.5 & 1.6.

(I) Implementation Considerations

Using the transfer of development rights process, zoning amendments to facilitate the transfer of extra site coverage from industrially zoned lands deemed marginal pursuant to the Future Land Use Map, to industrial parcels in the growth centers. Growth center parcels could then be eligible to cover up to 90% of their land by purchasing rights to square foot coverage from the marginal parcels so as to increase maximum site coverage from 70% to 90%. Parking and setback rights would also be available for purchase from the marginal parcels.

Subsequent updates of this plan will need to examine the need for additional industrial space. If it is warranted, the Town Meeting

could act to restore building rights to the marginal parcels if such action would be in the best interest of the Town. Any deed restrictions filed in connection with the initial transfer of rights should contain a clause that would permit restoration of development rights pursuant to an affirmative vote of Town Meeting.

Key Agencies

ATM, PB, (IPC), TC

Timing

Adopt amendments by 1996.

1.2.3.4.b

Facilitate the establishment of an industrial park in the area generally bounded by Great Western Road, the westerly town boundary, Main Street extension and Depot Street, excluding marginal areas identified on the Future Land Use Map, and providing for septic and storm water disposal outside of any Water Resource Protection District. Limit access to the industrial park to Great Western Road, only. Such action may include town involvement in securing a road layout and an appropriate area for environmentally sound septic and/or storm water discharge.

(I)

Implementation Considerations

An industrial park may be established by a landowner who controls a significant amount of acreage in the described area with or without any changes to the Zoning By-Law. However, it would be to the advantage of the Town and the property owner to create a special industrial park zoning district with standards for development that would promote clean, high quality industrial developments that complement each other and enhance the image of the park as a whole. Specific performance standards could be developed so as to eliminate the need for special permit review of any uses, thereby expediting the permitting procedure. Such a by-law may serve as a basis for securing exemption of individual projects from the Development of Regional Impact review requirements of the Cape Cod Commission.

An industrial park commission should be established to work with the owner(s) of property in the park, potential occupants, and the various permitting, financing, and marketing aspects of an industrial park. Numerous successful examples of such an agency could be reviewed to determine the specific roles and composition of an industrial park commission in Harwich.

Following certification of this plan as consistent with the Regional Policy Plan, the Town should formulate a development agreement with the land owner(s) of the industrial park property to arrive at a mutually satisfactory arrangement in which the Town's and the owner's actions and responsibilities in creating and operating the industrial park are clearly identified, subject to approval by Town Meeting. A Town appropriation of funds to help assemble property or secure adequate land for access and infrastructure, if needed, would be warranted due to the eventual enhancement of the tax base and employment opportunities to be created by the industrial park.

Key Agencies

ATM, PB, BOS, TE, TC, (IPC)

Timing

Designate an industrial park commission to initiate research into industrial park options and formulate an approach for consideration by the Planning Board and Board of Selectmen allowing adoption of this plan. Adopt any regulatory provisions by 1996.

- 1.2.3.4.c Promote complementary building design in all industrial areas through design guidelines and zoning incentives.

(I) Implementation Considerations

The appearance of industrial areas can be improved greatly through the consistent application of one or more design themes which can be promoted by developing the appropriate guidelines and amending the Zoning By-Law to provide adequate incentives for existing and future development to adhere to the design guidelines. Signage, facade materials, fencing and landscaping can be used to implement this concept.

Key Agencies

ATM, PB, (IPC), TC

Timing

Adopt zoning amendments by 1996.

- 1.2.3.4.d Acquire appropriate right-of-way along the Queen Anne Road industrial area to adequately accommodate drainage and utilities. This may trigger the need to adjust the building and parking setback requirements in this area.

(I) Implementation Considerations

Town Meeting action (including an appropriation) preceded by adequate public hearings for consideration of the detailed plans would be required. It does not appear advisable to straighten Queen Anne Road as this would increase the speed of traffic through established residential neighborhoods. Therefore any right-of-way should be for drainage and utilities only. A concurrent amendment to the Zoning By-Law would be necessary to prevent the establishment of zoning setback, lot area, and site coverage nonconformities as a result of the increased road width.

Key Agencies

ATM, DHM, PB, TE, TC

Timing

Implement zoning changes and acquisition by 1996.

- 1.2.3.4.e Seek limited direct access to the west to and from Route 6 at Factory Road so as to minimize industrial traffic through existing residential neighborhoods along Queen Anne Road.

(I) Implementation Considerations

A plan should be prepared by the Town Engineering Department which indicates the preliminary design and cost estimates for several different access arrangements between Queen Anne Road (industrial

area) and Route 6. The Board of Selectmen should conduct a lobbying effort to convince the MDPW to incorporate one of the designs into the overall ultimate improvement scheme for Route 6.

Key Agencies

BOS, TE, PB, TC, DHM

Timing

Commence effort following adoption of this plan.

1.2.3.4.f Provide for adequate buffering between industrial and residential parcels.

(I) Implementation Considerations

In addition to the existing requirements for such buffering, it would be appropriate to specify in the Zoning By-Law that only certain types of industrial uses may adjoin residential parcels and that any such use needs to be separated by a vegetated buffer of a specified width (25 to 50 feet is recommended).

Key Agencies

ATM, PB, TC

Timing

Adopt zoning changes by 1996.

1.2.3.4.g Provide for small scale neighborhood retail/service uses between the Cape Cod Rail Trail and Great Western Road along the west side of Depot Street to serve the convenience needs of the industrial and residential areas and help reduce vehicular traffic growth to and from existing commercial areas.

(I) Implementation Considerations

Amend the Zoning By-Law to allow small-scale retail/service stores in the described area. Any such amendment should include consideration of design guidelines and viability of specific uses allowed.

Key Agencies

ATM, PB, TC

Timing

Adopt amendments by 1996.

1.2.3.4.h Prohibit any commercial gasoline storage and dispensing in the industrial area west of the Herring River due to the extreme vulnerability of the downstream ecosystem.

(I) Implementation Considerations

Amend Zoning By-Law to ban gas stations and private gasoline, kerosene, diesel fuel, etc., storage facilities.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

- 1.2.3.5 Pleasant Lake - Economic growth center at the Route 6 interchange area. The proposed boundaries are shown on Figure 1.7.
- (I) Implementation Considerations
Amend Zoning By-Law and Map to designate prescribed area as a growth center and include standards for development therein.
- Key Agencies
ATM, PB, TC
- Timing
Adopt zoning amendments by 1996.
- 1.2.3.5.a Retain existing I-L zone on Route 124 and designate additional land as shown on Future Land Use Map, Figure 1.8, for regional economic activities (currently zoned R-L residential).
- (I) Implementation Considerations
Amend Zoning By-Law and Map to establish the described area as a place for economically beneficial regional uses such as an office park, convention center, cultural center, light industrial park, warehousing/distribution center, etc. Such amendments should allow for the establishment of an industrial park pursuant to 1.2.3.4.b above in the northwest section of the interchange area (bounded by Route 6, Route 124, Headwaters Drive and the Rail Trail) with access only from Route 124. Establishing access to Route 124 in the interchange area will likely require the approval of MDPW. Adequate buffering should be provided for all perimeter areas of the growth center.
- Key Agencies
ATM, PB, TC (TPC)
- Timing
Adopt zoning changes by 1996.
- 1.2.3.5.b Work with the State to design the appropriate traffic handling facilities along the economic development frontage.
- (I) Implementation Considerations
Since MDPW maintains jurisdiction over the layout and function of Route 124 in the interchange area, any necessary improvements must be determined cooperatively between the Town and State.
- Key Agencies
ATM, BOS (TSC), PD, DHM, PB
- Timing
Initiate discussions following adoption of this plan.
- 1.2.3.5.c Design and construct bikeway/sidewalk/transit facilities to serve existing and future businesses and residents so as to increase mobility and safety while decreasing dependence on the automobile. Ultimately provide continuous walkway along Route 124 from Bike Trail parking area to sidewalk network of Harwich Center.

- (I) Implementation Considerations
Appropriate funds to design improvements. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act).

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

- 1.2.3.5.d Designate noneconomic use areas near Route 6 interchange as residential TDR receiving areas. The proposed boundaries are shown on Figure 1.7.

- (I) Implementation Considerations
Amend Zoning By-Law and Map to facilitate the transfer of residential development rights from the environmentally sensitive areas of the Pleasant Lake area to the receiving area shown on the TDR map. Amendments should include density limits, housing types, and design guidelines.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

- 1.2.3.5.e Design and install full traffic signal at intersection of Route 124 and Queen Anne Road.

- (I) Implementation Considerations
Town Meeting appropriation, Chapter 90 or grant funding would need to be dedicated to hiring a traffic engineer to design the appropriate provisions to accommodate a full traffic signal at the subject intersection. Following completion of the design phase, any construction necessary should be programmed for funding.

Key Agencies

ATM, (TSC), PD, BOS, DHM

Timing

Implementation schedule would depend upon timing of growth in growth center.

- 1.2.3.5.f Require pollutant-intercepting storm drainage systems and denitrifying septic systems for large scale high density residential development and all nonresidential development.

- (I) Implementation Considerations
Amend the Zoning By-Law and Board of Health regulations to require appropriate facilities.

Key Agencies
ATM, PB, BOH, TC

Timing
Adopt regulatory framework by 1996.

- 1.2.3.5.g Facilitate the construction of affordable housing for families, the elderly, disabled persons and persons with mental handicaps, with an affordable unit target of 7% of the total year-round housing stock (at build-out) in the Pleasant Lake village.

- (I) Implementation Considerations
This will require the establishment of development bonuses and other incentives to leverage affordable units from development generated by the transfer of development rights into the growth center.

With regard to maintaining an ultimate population target of 20,000 people, any provision of density increases beyond what 1990 zoning would have permitted, will need to be offset by lands removed from developable status by virtue of deed restrictions or town acquisition. An accurate accounting system to keep track of the numbers of potential housing units and those allocated for bonuses.

Key Agencies
ATM, PB, TC

Timing
Begin work on developing appropriate incentives and programs upon adoption of this plan. Have regulatory framework in place by 1996.

- 1.2.3.5.h Acquire necessary easement(s) where insufficient right-of-way exists along Route 124 to provide identifying gateways, including signs stating, "Pleasant Lake Village". Special gateway facilities identifying the Town as whole should be provided opposite the ends off the off-ramps of Route 6 at Route 124. Such facilities should include an attractive consolidation of the various signs which appear in these areas.

- (I) Implementation Considerations
Appropriate funds or seek donations from community service organizations to establish appropriate signage, symbols, decorations, etc., to identify an entry way into the growth center. A gateway design committee could be appointed by the Board of Selectmen and charged with the responsibility of developing an acceptable design. If adequate right-of-way is lacking due to roadway and sidewalk coverage, then easements would need to be secured through a Town Meeting appropriation. Coordination with MDPW will be necessary since Route 6 is a State highway.

Key Agencies
BOS, ATM, MDPW, TC, TE, DHM

Timing

While immediate implementation is not critical, the processes for securing permission from the State and selecting a gateway design should be initiated by 1996 and any town appropriations should be programmed for implementation prior to the year 2000.

1.2.3.6

Harwich Center - Residential TDR receiving area within and around Harwich Center Historic District. The proposed boundaries are shown on Figure 1.9.

(I)

Implementation Considerations

Amend Zoning By-Law and Map to facilitate inclusion of additional housing within the prescribed area.

Key Agencies

ATM, PB, TC

Timing

Amend zoning by 1996.

1.2.3.6.a

Permit infill residential development at a density of 6 to 10 units per acre to increase the concentration of residents and promote a stronger demand for neighborhood commercial facilities.

(I)

Implementation Considerations

Amend Zoning By-Law to allow a higher density with appropriate standards for setbacks, height, parking, etc.

Key Agencies

ATM, PB, HDC, TC

Timing

Adopt zoning amendments by 1996.

1.2.3.6.b

Provide adequate bicycle/pedestrian/transit facilities where appropriate. Ultimately connect with surrounding growth centers.

(I)

Implementation Considerations

Appropriate funds to design improvements. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act).

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD

1.2.3.6.c

Design and construct streetscape beautification improvements such as promenades, ornate street lighting, street furniture, landscaping, sidewalks, public art, and special crosswalk treatments.

(I)

Implementation Considerations

Appropriate funds to design improvements with consideration of betterment assessments to partially fund such work. Secure inclusion of construction in the County's Transportation Improvement Program (TIP) so as to be eligible for Federal funds through the ISTEA (Intermodal Surface Transportation Efficiency Act).

Key Agencies

ATM, PB, BOS, TC, BA, CCC, DHM, (TSC), PD

Timing

Develop standards for such facilities by 1996. Incorporate design and construction into capital outlay plan for implementation by the year 2000.

1.2.3.6.d Establish identifying gateway facilities with appropriate signage.

(I) Implementation Considerations

Appropriate funds or seek donations from community service organizations to establish appropriate signage, symbols, decorations, etc., to identify an entry way into the growth center. A gateway design committee could be appointed by the Board of Selectmen and charged with the responsibility of developing an acceptable design. If adequate right-of-way is lacking due to roadway and sidewalk coverage, then easements would need to be secured through a Town Meeting appropriation.

Key Agencies

BOS, ATM, TC, TF, DHM, HDC

Timing

While immediate implementation is not critical, the process for selecting a gateway design should be initiated by 1996 and any town appropriations should be programmed for implementation prior to the year 2000.

1.2.3.6.e Provide for appropriate buffering and transition between multi-unit housing and strictly commercial development and multi-unit housing and single-family areas.

(I) Implementation Considerations

Amend Zoning By-Law to include appropriate standards. Amendments should include provisions for medium density multi-unit residential uses along the fringes of the growth center so as to provide a transition between the mixed use commercial/residential development and the bordering single-family neighborhoods.

Key Agencies

ATM, PB, TC

Timing

Adopt regulatory changes by 1996.

1.2.3.6.f Implement appropriate traffic management measures.

(I) Implementation Considerations

The proposed Traffic Safety Committee should examine the alternatives prepared by the traffic consultant for this area, presented in Section VIII, Community Facilities, and conduct ample public hearings to arrive at a consensus as to what measures to implement among the written alternatives or any which have not yet been identified. If structural improvements are deemed appropriate, the design and construction funding should be programmed into the capital outlay process.

Key Agencies

BOS, (TSC), PD, PB, TE, DHM.

Timing

Initiate in-depth study following adoption of this plan. Program any construction of improvements by 1996.

- 1.2.3.6.g Facilitate the construction of affordable housing for families, the elderly, disabled persons and persons with mental handicaps, with an affordable unit target of 7% of the total year-round housing stock (at build-out) in the Harwich Center village.

(I) Implementation Considerations

This will require the establishment of development bonuses and other incentives to leverage affordable units from development generated by the transfer of development rights into the growth center.

With regard to maintaining an ultimate population target of 20,000 people, any provision of density increases beyond what 1990 zoning would have permitted, will need to be offset by lands removed from developable status by virtue of deed restrictions or town acquisition. An accurate accounting system to keep track of the numbers of potential housing units and those allocated for bonuses.

Key Agencies

ATM, PB, TC

Timing

Begin work on developing appropriate incentives and programs upon adoption of this plan. Have regulatory framework in place by 1996.

- 1.2.4 Pursue state legislation to allow towns to permit clustering as-of-right and revise clustering requirements to make process simpler and promote more effective designs. Revisions should include a requirement/incentives to provide for interconnections of open space between parcels and encourage large contiguous open space areas.

(I) Implementation Considerations

The Town (BOS, PB) should actively lobby for adoption of appropriate legislation if not already accomplished prior to adoption of this plan. Regardless of outcome on State cluster legislation, the Zoning By-Law and Planning Board regulations should be overhauled relative to the provisions for clustering contained therein.

Key Agencies

ATM, BOS, PB, TC

Timing

Adopt regulatory changes by 1996.

1.2.5 Permit TDR's between two or more parcels in the areas shown the TDR Map (see Figure 1.1) provided the receiving parcel is farthest (of the participating parcels) from an environmentally sensitive area such as a fresh or salt water recharge area or a well head area, appropriate buffering is required, the net development area density does not exceed four dwelling units per acre on the receiving parcel, and allowances are made for trails and wildlife areas on all participating parcels. Also, transfer of development from greenbelt area parcels (see Figure 1.10) to nongreenbelt areas should be encouraged.

(I) Implementation Considerations

In amending the Zoning By-Law to create provisions for the transfer of development rights program, appropriate language to permit and encourage the inter-parcel transfer of development rights. Adequate provisions for density limits, open space, site design, and priority sending areas (to be determined by Planning Board and Conservation Commission) should also be included.

Key Agencies

ATM, PB, ConC, TC

Timing

Adopt zoning changes by 1996.

1.2.6 Revise zoning standards to permit continuance of village-style development patterns within village centers and on their fringes.

(I) Implementation Considerations

The village centers and fringe areas as shown on the Future Land Use Map (See Figure 1.8) should become special zoning districts to facilitate the implementation of revised development standards to permit existing development patterns (lot size, frontage, setbacks, etc.) to continue with infill and redevelopment.

Key Agencies

ATM, PB, TC, HDC

Timing

Adopt zoning changes by 1996.

1.2.7 Encourage through zoning revisions and other incentives the establishment of greenhouse agriculture in rural areas.

(I) Implementation Considerations

Where residential development rights have been transferred or reduced, maintain the Zoning By-Law allowance for greenhouse agriculture.

Key Agencies

PB

Timing

Ongoing

1.2.8 Establish upper limits on the size of new buildings and expansions of existing buildings.

- (I) Implementation Considerations
Amend Zoning By-Law to limit the size of buildings, both new construction and expansions, either by establishing a floor area ratio or imposing a cubic footage limit.

Key Agencies
ATM, PB, BD, TC

Timing
Adopt zoning changes by 1996.

- 1.2.9 Address Zoning By-Law deficiencies identified in Existing Land Use section (Section VI). Include thresholds for the requirement of traffic impact analyses and nitrate-nitrogen loading studies.

- (I) Implementation Considerations
Amend Zoning-By-Law to include improvements to various definitions of terms, use table provisions and other topics identified in Section VI, Existing Land Use. Also to be included are thresholds for the requirement of traffic and nitrogen loading studies.

Key Agencies
ATM, PB, TC, BOH

Timing
Adopt zoning amendments by 1996.

- 1.2.10 Maintain existing compatible zoning at town boundaries.

- (I) Implementation Considerations
This self explanatory measure should not exclude the ability of Harwich to amend development standards or adjust permitted use classifications, provided the basic zoning compatibility between towns is not breached. An example of such a breach would be changing a single-family residential zone along a town boundary to a commercial zone or high density multi-family zone.

Key Agencies
PB

Timing
Ongoing

- 1.2.11 Designate the Planning Board as the use special permit granting authority.

- (I) Implementation Considerations
Amend the Zoning By-Law to designate the Planning Board as the use special permit granting authority.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning change by 1996.

1.2.12 Develop permitting controls to monitor changes in use from seasonal to year-round.

(I) Implementation Considerations

Adjust the permitting system for home renovations and improvements to identify structures which are being converted from seasonal to year-round use based partly on indicators such as insulation and heating system installation, certain plumbing changes, and certain kitchen upgrades.

Key Agencies

ATM, PB, BD, TC

Timing

Adopt regulatory changes by 1996.

1.2.13 Adopt appropriate provisions for requiring on-site denitrifying septic systems in growth centers and for certain affordable housing developments, where feasible and necessary. Such provisions should include incentives for shared systems and retrofitting of existing systems which serve high nitrate-nitrogen generating uses.

(I) Implementation Considerations

The Planning Board and Board of Health, in consultation with the Massachusetts Department of Environmental Protection, should jointly develop appropriate regulations and by-laws to implement this provision as soon as possible. Such requirements should incorporate use of the most affordable, cost-effective technology available for use in the State.

Key Agencies

ATM, PB, BOH, TC

Timing

Adopt regulatory measures by 1996.

1.2.14 Fund all public streetscape beautification improvements in growth center areas with bonds to be paid in part by pro-rated betterment assessments of properties served by such improvements.

(I) Implementation Considerations

Board of Selectmen to establish a betterment assessment program, designate betterment areas, and determine method for assessing each property. Projects must first be constructed, then bonds are paid off through annual assessments to the properties which benefit from the acquisitions and/or constructed improvements.

Key Agencies

BOS, BA

Timing

Betterment assessment program and area boundaries to be established by 1996.

1.2.15 Develop design compatibility guidelines and provide design conformity incentives through zoning bonuses for development in the growth centers.

- (I) Implementation Considerations
Designate an agency to develop specific design guidelines, building on the "This Place, Our Place in Harwich" project which documented key design aspects in each of the Town's seven villages. A guidelines document would be published to complement appropriate new provisions in the Zoning By-Law to tie design conformity with zoning bonus incentives. The Zoning By-Law would correlate what sort of design features for a proposed development project would invoke what kind of zoning relief pursuant to section 13.2.2.1 of this plan. The incentives would be administered by the special permit granting authority during the development permitting process.

Key Agencies

ATM, PB, BOS, AAB, HC, HDC

Timing

Adopt guidelines and regulatory framework by 1996.

1.2.16 Develop system of zoning incentives to achieve other goals as development occurs townwide.

- (I) Implementation Considerations
Amend the Zoning By-Law to specify what types of voluntary amenities offered by a developer would qualify for specific variations of existing and future zoning standards. For example, if two property owners join together to provide a shared parking lot or shared driveway, the interior landscaping requirements would be reduced. Another example would be the provision of a pocket park in exchange for greater site coverage or a setback leeway of five feet. The incentives would be administered by the Planning Board during site plan review.

Key Agencies

ATM, PB, TC

Timing

Adopt regulatory changes by 1996.

1.2.17 Emphasize protection of the historical character of the growth centers in Harwich Port, West Harwich, and Harwich Center through development of appropriate building siting, scale, and design guidelines and incentives along with any regulatory controls pursuant to implementation of the historic preservation recommendations contained in this plan.

- (I) Implementation Considerations
Using design guidelines to be developed pursuant to section 13 of this plan and any regulatory products resulting from historic resource district designation (see section 13.2.1.2), prepare meaningful incentives to owners of historic structures to restore and maintain

the traditional architectural features of their buildings. Also provide incentives for compatible design of new development pursuant to section 13.2.2.1.

Key Agencies

ATM, HC, HDC, PB, TC

Timing

Begin work on the guidelines following adoption of this plan.
Establish regulatory framework by 1996.

2.0.0 Natural Resources - WATER

Issues Summary

Topics covered by this section include drinking water, ponds and salt water bodies. Technical findings on these topics are provided in detail in Section V - Physical Characteristics, compiled during the data gathering phase of this plan. A summary of the material is contained in a document entitled "Technical Findings Summary". Both are available for review in the Harwich Planning Department office. Water issues related to wetlands are covered in section 4.0.0.

Regarding potable water, a 1990 analysis of all the public supply wells which were on line as of 1989 and two future wellfields in East Harwich, indicated that only the South Harwich wellfield would exceed at build-out the planning standard of 5 parts per million of nitrate-nitrogen in the water to be drawn by this well. The levels of nitrate-nitrogen is a reliable indication of drinking water quality. Therefore, measures to mitigate the sources of nitrate-nitrogen loading in the zone of contribution to the South Harwich wellfield are warranted.

Studies on Long Island and Cape Cod have verified that residential densities greater than one, three-bedroom dwelling per acre is detrimental to drinking water quality over the long-term. This suggests that maintenance of water quality in supply wells (public, existing and future, and private) depends on respecting this density ceiling. Improper handling and storage of hazardous materials was also identified as a threat to potable water supplies.

Ponds were found to be most impacted by excess nitrate-nitrogen and phosphorous from septic systems and lawns and by polluted runoff of stormwater from streets. Generalized areas upgradient of ponds (recharge areas) were identified as needing special management to prevent excessive loading of contaminants into pond waters.

Four salt water embayments (harbors) were studied for their ability to cleanse themselves through tidal flushing. The results indicated a need to minimize and or mitigate septic discharges in the identified recharge areas to these resources. The recharge area to the Herring River was also mapped.

Overview of Recommendations

In order to properly manage the groundwater impacts of the growth projected between 1990 and full development, specific standards for nitrate-nitrogen loading from new development are recommended. A standard of 5 parts per million is recommended for critical water resource areas while a less restrictive standard of 10 parts per million is recommended for growth center areas.

Action plans (short and long range) and standards for mitigating pollutants in stormwater runoff are recommended to protect all types of water resources from future and some existing sources of contaminants.

Recommendations to encourage innovative wastewater treatment technologies and provide for adequate conventional sewage treatment facilities are also included.

Relation to Other Sections

The Water Resources section has its greatest connection with the Land Use section where there are recommendations to pursue groundwater and water body protection through application of creative growth management techniques such as transferable development rights (TDR's) and incentive zoning. The Land Use section also contains recommendations for sewage collection and treatment systems in some of the growth centers in order to preserve groundwater quality. Measures to properly manage storm runoff are also included in the growth center sections.

There is some necessary overlap with the Coastal Resources and Wetlands sections which follow since these both deal with fresh and salt water. The Solid/Hazardous Waste Management and Historic Preservation/Community Character sections also include water resource protection concepts.

Finally, water resources in Harwich have been determined to be of vital importance to the Town's tourism and seasonally based economy. Therefore, implementing measures to preserve water quality can be viewed as supporting the viability of the Town's economy.

Technical Aspects

The following are explanations of some of the key terms and concepts which warrant clarification as they appear in this section:

Artificial wetlands - Wetlands which have been constructed as opposed to being formed naturally.

Cape Cod Commission - Water Resources Office Technical Bulletin #91-001 - A document of methodology for projecting the quantities of nitrate-nitrogen expected to be generated by development. Copies of this document are available at the offices of the Cape Cod Commission and the Harwich Planning Department.

Cumulative impact analysis - Within the water resources context, an analysis of the cumulative water quality impacts, taking into account all existing and potential future development within a specific watershed in which a proposed development project would be situated.

Fresh water recharge area - The land area that contributes storm runoff, irrigation water and septic discharges to a specified fresh water resource such as a well, pond, or wetland.

GPD - Gallons per day.

Ground water - Fresh water which generally lies amidst particles of soil and sediment below the surface of the ground. Where depressions in the land form ponds and wetlands, ground water becomes surface water.

Impaired area - In the water resource context, an area in which the quality of ground water is likely to have a concentration of nitrate-nitrogen which is at or higher than 10 parts per million (ppm).

Innovative waste water treatment technologies - A collection of nontraditional approaches to the treatment of sewage. The solar aquatics (tm), peat septic system, and recirculating sand filter are three examples of such approaches.

Marine water recharge area - A recharge area such as defined above which drains into a salt water embayment or brackish (mixed salt and fresh water) river.

Maximum cumulative nitrate-nitrogen load - The ultimate level of nitrate-nitrogen loading expected as determined by a cumulative impact analysis.

Mitigation - The reduction of expected impacts.

Nitrate-nitrogen loading - The build-up of levels of nitrate-nitrogen in ground or surface waters (fresh or salt) attributable to sources such as septic systems, sewage treatment plants, and garden/lawn fertilizer.

Potential public water supply area - An area which has promise as a public water supply well area due to favorable results of preliminary tests and levels of existing and potential future development in its recharge area which would not jeopardize the long-term quality of the water.

PPM - Parts per million.

Recharge area - The land area which contributes precipitation, irrigation water, and septic system discharges which drain through a specified point or area. There are recharge areas for ponds, harbors, rivers, bays, wetlands, and wells.

Sewage effluent - The outflow of wastewater from a septic system or sewage treatment plant.

Water quality improvement area - An impaired area that lies fully or partially within one or more of the following: wellhead protection area, fresh water recharge area, and marine water recharge area.

Wellhead protection area - The delineated zone of contribution to existing public and community water supply wells.

Zone II - Effectively the same as a wellhead protection area.

310 CMR 22.02 - Definitions section of the Code of Massachusetts Regulations, section 22, which pertains to drinking water regulations, a copy of which is on file in the office of the Harwich Planning Department. The definition referred to in this plan is "Zone II" which reads as follows: "Zone II means that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation). It is bounded by the groundwater divides which result from pumping the well, and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries. In all cases, Zone II shall extend upgradient to its point of intersection with prevailing hydrogeologic boundaries (a groundwater flow divide, a contact with till or bedrock, or a recharge boundary)."

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Water Resources goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91). Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

A question was raised by the Commission relative to the designation of a growth center (East Harwich) within the boundaries of a zone of contribution to a public water supply well. The basis for the plan's recommendation lies in the fact that this area is already thoroughly committed to commercial growth. An attempt five years ago to downzone the undeveloped commercial land in this area resulted in the filing of zoning protection plans by every affected land owner. The Planning Board decided that any attempts to scale back the existing development potential in this area would be futile. Instead, it decided to enhance the viability and utilization of the growth center land by adding residential development potential through the TDR approach, provided that new development would be connected to nitrate-nitrogen reducing sewage treatment facilities and subject to a maximum nitrate-nitrogen loading standard of 5 ppm and that parking lot runoff would be passed through vegetated areas. The introduction of advanced sewage treatment for the residential and new commercial uses would increase the likelihood of including treatment of sewage from existing development, resulting in an overall improvement of potential nitrogen loading throughout the affected well recharge areas in Harwich. This result would be consistent with the intent of the Regional Policy Plan.

2.1.0 Goals

- 2.1.1 To maintain the overall quality and quantity of Harwich's ground water to ensure a sustainable supply of high quality, minimally treated drinking water.
- 2.1.2 To preserve and improve the ecological integrity of marine and fresh surface waters.
- 2.1.3 To encourage the use of public and private sewage treatment facilities in appropriate areas where they will advance the goals of this plan and where they can be adequately managed and maintained.

2.2.0 Recommendations

- 2.2.1 Establish 5 ppm as the maximum cumulative nitrate-nitrogen load for the following areas:
 - A. wellhead protection areas
 - B. fresh water recharge areas
 - C. marine embayment recharge areas
 - D. water quality improvement areas
 - E. potential water supply areas

(I) Implementation Considerations

Amend Board of Health regulations as well as Zoning By-Law to set upper limit for nitrate-nitrogen loading within the restricted areas designated on the water resources map contained in this plan. In order to minimize the complexity of determining the cumulative load, the Town should work with the Water Resources staff of the Cape Cod Commission to detail the existing and expected nitrate-nitrogen loads, using the Commission's Geographic Information System (GIS) computer

software. This system already contains current land use and parcel data for the entire town and would need to be queried about potential nutrient loading within each restricted water resource area so that a fair allocation of nitrate-nitrogen allowance can be made for all properties in a given resource area. Then, if private or public sewage treatment facilities, open space acquisitions, development rights transfers, or conservation restrictions subsequently occur, the parcel-by-parcel allocation of nitrate-nitrogen loading capacity can be adjusted accordingly. It may even be advisable to acquire a GIS program and appropriate hardware/training and maintain the capacity to generate "what if" scenarios in-house because the use of the Commission's GIS by 14 other towns severely limits access time to that system.

While 5 ppm is recommended as the maximum nitrate-nitrogen load for marine embayment recharge areas, the regulatory process should aim at post-development levels of less than 5ppm until more conclusive findings are available relative to the interrelationship between nutrient loading in the recharge area and natural tidal flushing of the embayments.

Key Agencies

ATM, BOH, PB, TC, CCC

Timing

Adopt regulatory changes by 1996. Examine need for computer system following adoption of this plan.

2.2.2 Establish a maximum cumulative nitrate-nitrogen load of 10 ppm for the following areas, provided that where these areas overlap with A through E of 2.2.1 above, the more stringent standard shall apply:

- A. growth centers
- B. impaired water quality areas

(I) Implementation Considerations

Amend Board of Health regulations and Zoning By-Law to set this standard. The approach to implementing and managing this requirement detailed in 2.2.1 would apply here as well.

Key Agencies

ATM, BOH, PB, TC, CCC, TE

Timing

Adopt regulatory changes by 1996.

2.2.3 Identify and adopt appropriate standards for impacts on surface waters and wetlands from septic tanks, parking areas, and erosion/sedimentation.

(I) Implementation Considerations

Amend Board of Health, Zoning, and Conservation Commission requirements (as applicable) to establish the appropriate standards.

Key Agencies

ATM, BOH, ConC, PB, TC, TE

Timing

Adopt regulatory changes by 1996.

- 2.2.4 Prepare short-term and long-range plans for mitigating existing discharges of untreated public road/parking area runoff into wetlands and water bodies.

(I) Implementation Considerations

The Board of Selectmen should appoint a committee to investigate the options for mitigating polluted runoff, inventory the locations where existing discharges exist and develop a plan for mitigating each discharge with an implementation and potential funding schedule.

Key Agencies

BOS, ConC, BOH, PB, TE

Timing

Appoint committee following adoption of this plan.

- 2.2.5 Develop and implement a private well monitoring program with specific attention to withdrawal volumes and water quality.

(I) Implementation Considerations

Board of Health and Board of Water Commissioners should coordinate with the Mass. Department of Environmental Protection and private well-drilling firms to receive routine data on private wells, both existing and new.

Key Agencies

BOH, BWC

Timing

Commence following adoption of this plan.

- 2.2.6 Establish and/or streamline the permitting process to the greatest practical extent, for innovative waste water treatment technologies.

(I) Implementation Considerations

To the extent permissible by the prevailing State regulations, the Board of Health should develop or maintain the appropriate procedures and capacity to quickly process permit applications for innovative waste water treatment technologies. The Town should continue to press the State to facilitate innovative waste water treatment.

Key Agencies

BOH

Timing

Review procedures and capacity following adoption of this plan.

- 2.2.7 Develop and implement storm water management requirements for both public and private entities, including design and construction criteria for artificial wetlands as they may be used to mitigate pollutants in storm water runoff.

- (I) Implementation Considerations
The health, planning, conservation and engineering functions should join to formulate the appropriate requirements which should be incorporated into the by-laws and regulations of the various agencies responsible for storm water management.

Key Agencies

ATM, BOH, PB, TE, ConC, TC

Timing

Begin work following adoption of this plan and adopt regulatory changes by 1996.

- 2.2.8 Develop water conservation goals and devise a system for achieving the stated goals.

- (I) Implementation Considerations
The Board of Water Commissioners should expand their current water conservation efforts and work with the Planning Board, Board of Health and Conservation Commission to incorporate measures to conserve water through the permitting procedures of each agency. The Board of Selectmen should issue policy statements supportive of the conservation efforts and otherwise be active in promoting water conservation. Particular emphasis should be given to conservation in areas subject to the 5 parts per million nitrate-nitrogen loading standard.

Key Agencies

BWC, PB, BOH, ConC, BOS

Timing

Commence work following adoption of this plan.

- 2.2.9 Require/encourage landscaping which incorporates native species and other plantings which can grow well in the Cape climate without chemical additives.

- (I) Implementation Considerations
Amend Zoning By-Law to include requirements and incentives.

Key Agencies

ATM, PB, TC

Timing

Adopt regulatory changes by 1996.

- 2.2.10 Maintain an adequate hazardous waste spill response capacity.

- (I) Implementation Considerations
The Board of Selectmen and Finance Committee should continue to support the capacity of the Fire Department and any other town agency having a role in responding to a hazardous waste spill. At the minimum, ongoing staff training and practice drills should be funded.

Key Agencies

ATM, BOS, FC, FD

Timing

Ongoing

- 2.2.11 Develop and implement sewage treatment facility criteria including when such facilities would be required, where they may be permitted, how to design, construct and maintain them, and provisions for long-term maintenance/replacement.

(I) Implementation Considerations

The Board of Health should develop such criteria and incorporate them into its rules and regulations.

Key Agencies

BOH, TE, TC

Timing

Adopt regulatory changes by 1996.

- 2.2.12 Implement the following water resource protection measures:

- A. Maintain the water resource protection zoning overlay districts and their accompanying zoning regulations.
- B. Amend the Water Resource Protection District map to reflect the amended boundaries.
- C. Consider adoption of the "Wellhead Protection Zoning and Nonzoning Controls" as included in 310, Code of Massachusetts Regulations, Section 22.21 (2), under Community Water System Requirements as promulgated by the Massachusetts Department of Environmental Protection.
- D. As data from testing identifies viable future water supply areas, they should be mapped and included within the scope of the prevailing water resource protection measures. Land acquisition in the designated areas should be made a high priority.
- E. Develop and implement roadway snow removal management strategies that minimize the total application of salt and other harmful deicing chemicals.

(I) Implementation Considerations

Maintain or amend the Zoning By-Law as indicated. Consideration of item C would need to be more in-depth and would require the participation of the Board of Health. A copy of 310 CMR, 22.21 (2) is available for review in the office of the Planning Department. Item D would need to be carried out by the Board of Water Commissioners. Item E would be under the jurisdiction of the Division of Highways and Maintenance.

Key Agencies

ATM, PB, BOH, BWC, DHM, TC

Timing

Adopt regulatory changes by 1996.

2.2.13

Develop and implement a program to protect delineated water resource recharge areas which includes the following measures:

- A. Completion of appropriate nutrient loading analysis of each recharge area, including inter-town analyses of shared water resources.
- B. Development of recharge area management plans which will include nutrient loading guidelines and requirements for new development, upgrading of existing septic systems when affected property is sold or re-developed, responsibility and awareness programs for all property owners, establishment of land acquisition priorities as needed, and incorporation of threatened areas within TDR sending areas (see Land Use Section).

(I) Implementation Considerations

The Planning Board, Board of Health, and Conservation Commission should collaborate on the development and implementation of the proposed protection program with each agency incorporating the new provisions within their respective rules and regulations, by-laws, and programs.

Key Agencies

ATM, PB, BOH, ConC, TC

Timing

Adopt regulatory measures for existing delineated areas by 1996. Incorporate newly delineated areas within one year of their approved delineation.

2.2.14

Pursue appropriate measures to assure the sufficiency of the public water supply needed to meet the projected year-round and seasonal water demand at build-out.

(I) Implementation Considerations

The Planning Board should work with the Board of Water Commissioners to determine the needed water supply capacity in terms of pumping facilities and new well fields and to coordinate the inclusion of known potential recharge areas within the appropriate protection categories identified in this plan and the related protection measures for such lands.

Key Agencies

PB, BWC

Timing

Commence following adoption of this plan.

2.2.15

Continue the pursuit of water resource recharge area delineation.

(I) Implementation Considerations

The Planning Board should work with the Water Resources staff of the Cape Cod Commission to establish appropriate delineations of all water resource recharge areas, with updates as needed, so as to complete the delineation of these resources. Implicit in this is the need to follow through with inclusion of affected lands within the appropriate protection categories identified in this plan and the related protection measures for such lands.

Key Agencies
PB
Timing
Ongoing

3.0.0

Natural Resources - COASTAL

Issues Summary

All coastal resources in the Town are valuable environmental, economic, and aesthetic assets. Property values and tourism activity are directly linked to the quality of coastal and other scenic/recreational resources.

Overall, impacts from human activity and natural forces constitute the main issues for coastal resources in Harwich. Specifically, the continued development of land along and adjacent to coastal environments has threatened the sustainable viability of such areas. Nevertheless, property values and rights are strongly vested in these unique areas. Therefore, proper management of coastal area development and the actual coastal resources (as opposed to acquisition) is the only practical option available.

Chief among the impacts found to occur were erosion, high bacteria counts in coastal embayments following the collection and discharge of storm water from developed areas, and high nutrient loading into coastal embayments from upgradient development.

Threats of more frequent flooding and more extensive storm damage to natural and man-made coastal features lie in the future course and extent of sea level rise.

Beach areas and other salt water wetlands provide critical habitat for coastal wildlife. These resources are threatened by human overuse, litter, pollution, and lack of education among users. Conversely, adequate access to beaches was found to be lacking for existing and projected populations.

Overview of Recommendations

The plan for protection and enhancement of coastal resources is embodied in a recommended set of 18 types of guidelines and policies to be implemented by various boards and commissions in town.

Relation to Other Sections

Since coastal resource issues include water, wetlands, wildlife, development, harbors, recreation and community character, the following sections of this plan have some overlap with this one: Land Use/Growth Management, all the Natural Resource sections, Economic Development, Capital Facilities/Infrastructure, Open Space and Recreation, and Community Character.

Technical Aspects

The following are explanations of some of the key terms and concepts which appear in this section:

Base flood elevation - As shown on National Flood Insurance Rate Maps, the vertical distance above mean sea level at or above which first finished floors of new structures or substantial improvements in a flood zone must be constructed.

First floor elevation - The vertical distance above mean sea level of the first finished floor of a structure.

Flood prone areas - Areas subject to periodic inundation from sea water driven by storms or extreme high tides. Effectively, FEMA V and A flood zones.

High hazard areas - Areas at risk of structural damage or loss of life due to flooding or erosion.

Marine waste holding tank pump-out facility - Apparatus, either mobile or fixed in place, which is used to extract the waste from boat toilet holding tanks. Such facilities eliminate the need to discharge holding tanks into marine waters.

Mounded septic systems - Septic systems which are established on fill material in order to achieve the required minimum clearance between the bottom of a leaching facility and the ground water beneath it.

Nonwater-dependent use - A land based use of property which does not require direct access to coastal waters to be viable. Some examples of such uses are: dwellings, offices, and retail stores.

Public views of the shoreline - Any views of coastal shoreline which can be seen from a way, park, beach, structure, etc., to which the public has access.

Water-dependent use - A land based use of property which requires direct access to coastal waters to be viable. Some examples of such uses are: marinas, boatyards, and aquariums.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Coastal Resources goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91), except as provided below. Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

RPP Minimum Performance Standard 2.2.2.4 -

Development and redevelopment on or within 100 feet landward of a coastal bank or dune shall be designed to have no adverse effect on the height, stability, or the use of the bank or dune as a natural sediment source. In areas where banks or dunes are eroding, the setback for all new buildings and septic systems to the top of the coastal bank or dune crest shall be at least 30 times the average annual erosion rate of the bank or dune. This rate shall be determined by averaging the erosion over the previous 30-year period at a minimum. In instances where shoreline erosion rates are indicative of bank/dune erosion rates, MCZM shoreline change maps may be used in determining the setback.

Reason for Inconsistency - This plan does not reflect the above standard. While there is no dispute over the need to provide for a reasonable setback of a structure from a coastal bank, there would be great technical difficulty in applying the formula provided in RPP section 2.2.2.4 due to the lack of accurate data sources for determining shoreline erosion rates. As data was gathered and compiled in the Section V, Physical Characteristics portion of this plan, it was found that shoreline change varied from property to property and the location of coastal banks were difficult to interpret from the aerial photographs examined. It was also concluded that dramatic shoreline change could occur as a result of just one storm.

Therefore, it was not practical to establish a rate of erosion of coastal banks for analytical or regulatory purposes. Section 3.2.1.H of this plan recommends the establishment of minimum building setbacks from a coastal bank or dune and would therefore achieve results similar to that of the RPP standard as both are intended to protect coastal banks and dunes and structures placed near them.

3.1.0 Goals

- 3.1.1 To protect the public interests in the coast, including rights for fishing, fowling, and navigation and expand, where appropriate, public access to the shoreline, through acquisitions or donations and provision of facilities.
- 3.1.2 To preserve, manage, and restore coastal areas so as to safeguard and perpetuate their biological, economic, and aesthetic values.
- 3.1.3 To control development in high hazard areas in order to minimize the loss of life and structures and the environmental damage resulting from storms, natural disasters, and sea level rise.
- 3.1.4 To maintain and improve coastal water quality to allow shellfishing and/or swimming in all coastal waters as appropriate, and to protect and re-establish coastal ecosystems which support shellfish and finfish habitat.

3.2.0 Recommendations

- 3.2.1 Develop and implement coastal protection/development guidelines and requirements which will specify or include the following:
 - A. Existing public rights-of-way to coastal waters shall not be interfered with or obstructed.
 - B. Criteria for maintaining views of saltwater bodies.
 - C. Incentives for private development to provide public walkways and/or other access to the shorelines.
 - D. Establishment of public access to beaches that are nourished by publicly funded projects.
 - E. Any changes of a use from water-dependent to nonwater-dependent must include one or more of the following public benefits:
 - 1. Provision on-site of new public access to the shoreline in the form of parking space, walkways, and/or new public views of the shoreline.
 - 2. Provision off-site (within the Town) of coastal facilities such as rest rooms at beaches, additional land, parking or other coastal facilities for public use.
 - F. Incentives/requirements for developable waterfront property to accommodate water dependent uses to the greatest extent practical.
 - G. The maximum first floor elevation for all new structures and substantial additions in flood prone areas should be one foot above the base flood elevation for the subject site.
 - H. Prohibition of construction on coastal dunes, except for water-dependent recreational uses with appropriate safeguards.
 - I. Minimum building setbacks from a coastal bank or dune.
 - J. Guidelines for reconstruction of structures following their destruction by a natural disaster.

- K. Guidelines for minimizing pedestrian and bicycle, boat, and automobile traffic through critical wildlife and plant habitat areas.
- L. Criteria for private and public dredging projects, including provisions for town determination of where dredge material is to be deposited.
- M. Prohibition of new mounded septic systems except to upgrade an existing system posing a demonstrated threat to coastal resources.
- N. A minimum five foot separation to ground water for septic systems.
- O. Design criteria for storm water systems in coastal areas so that such systems could function properly after a one foot rise in mean sea level.
- P. Incentives for community docks as opposed to multiple docks for individual owners.
- Q. Appropriate contributions of funding or construction of marine waste holding tank pumpout facilities from establishments that can accommodate new water or land storage of ten or more boats.
- R. Criteria for installation and operation of waterfront fueling facilities.

(I) Implementation Considerations

Recommended guidelines, criteria, requirements, and incentives should be incorporated into Town By-Laws and policies following their development by the Conservation Commission, Waterways Committee, Board of Health, and Planning Board, as appropriate.

Key Agencies

ATM, ConC, WWC, PB, BOH, TC

Timing

Adopt regulatory framework by 1996.

- 3.2.2 Develop a harbor management plan which is substantially consistent with state guidelines for such plans.

(I) Implementation Considerations

The Waterways Commission, Harbormaster, Conservation Commission, Planning Board, and Town Engineer should work together to develop the plan and pursue its adoption and implementation.

Key Agencies

ATM, WWC, ConC, HM, PB, TE, PC, TC

Timing

Pursue formulation of a harbor plan following adoption of this plan.

- 3.2.3 Develop a list of projects that would provide appropriate types of coastal access and shoreline use to serve as local input to the conditioning of Chapter 91 licenses issued by the State.

(I) Implementation Considerations

The Waterways Commission, Harbormaster, Conservation Commission and Planning Board should develop the suggested list and update it regularly. The Board of Selectmen should adopt the project list following sufficient public discussion and modification, if needed.

Key Agencies

BOS, WWC, ConC, HM, PB

Timing

Develop list following adoption of this plan.

3.2.4

Adopt a "no boat waste discharge zone" within three miles of the Harwich Shoreline in Nantucket Sound and for all of Pleasant Bay in Harwich.

Implementation Considerations

The Board of Selectmen should sponsor a Town Meeting article to adopt this amendment to the General By-Law, provided ample positive feedback is obtained during the public hearing process prior to submission of the article.

Key Agencies

ATM, BOS, WWC, HM, TC

Timing

Adopt regulation by 1996.

Issues Summary

Wetlands, both fresh and saline, are extremely valuable natural resources. With wetlands covering 12% of the Town's land area their proper protection and management is critical to maintaining their diverse ecologic and economic functions.

Fresh water or inland wetlands disperse and absorb flood waters, recharge and purify groundwater, provide critical habitat for wildlife, denitrify acid rain and excess fertilizer, take up and retain pollutants, and support unique flora. Cranberry bogs, valuable scenic and economic resources for Harwich, are considered fresh water wetlands. The greatest threat to this type of wetland is inappropriate development resulting in removal, filling, contamination, and/or siltation.

Salt water or coastal wetlands include beach areas and salt marsh environments and are represented by the Herring, Red, and Monomoy River systems in Harwich. These areas provide for buffering of wave energy from storms and offer unique habitat for coastal wildlife. In addition to vulnerability to the same threats as fresh water wetlands, saltwater wetlands are subject to abrupt changes from storms. The introduction of structures along the shoreline may cause more severe damage to other unprotected beach areas.

A more detailed discussion of wetlands is contained in Section V - Physical Characteristics compiled during the data gathering phase of this plan. Also, a summary of the findings in Section V are contained in a document entitled "Technical Findings Summary". Both are available for review in the Harwich Planning Department office.

Overview of Recommendations

The recommendations for wetlands involve reasonable, realistic measures to protect and enhance wetland resources in Harwich, including the adoption of soil erosion and sediment control measures for new development on any property within 1,000 feet of a vegetative wetland.

Relation to Other Sections

There is some interrelatedness with the Water Resources, Coastal Resources, Wildlife and Plant Habitat, and Land Use sections of this plan.

Technical Aspects

The following are explanations of some of the key terms and concepts which appear in this section:

Best management practices - within the context of bog management a collection of the most practical and up-to-date approaches to managing the application of chemicals in cultivating cranberries.

Buffer areas - Areas 100 feet in depth which lie adjacent to vegetative wetland areas or open water. Any development within this 100 foot buffer area or its adjoining wetland must be reviewed by the Harwich Conservation Commission.

Nonwater dependent uses - A land-based use of property which does not require direct access to coastal waters to be viable. Some examples of such uses are: dwellings, offices, and retail stores.

Soil erosion and sediment control - A development management practice which incorporates measures to prevent both short and long-term loss of soil from a development site where soil is disturbed by excavation, devegetation, grading, stockpiling, or filling.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Wetlands goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91). Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

4.1.0 Goals

4.1.1 To preserve, protect, and enhance the quality and quantity of inland and coastal wetlands in Harwich.

4.2.0 Recommendations

4.2.1 Revise wetland regulations to prohibit construction or disturbance of natural vegetation within 100 feet of wetlands for non-water dependent uses with appropriate exceptions such as access pathways and vista pruning, except when no other feasible alternative to such construction or disturbance exists.

(I) Implementation Considerations
Conservation Commission should revise its regulations as needed to implement this measure.

Key Agencies
ATM, ConC, TC

Timing
Adopt regulatory changes by 1996.

4.2.2 Develop criteria and standards for how wetlands may be altered and under what circumstances, including the installation of utilities.

(I) Implementation Considerations
Conservation Commission should spell out as part of its regulations how and when, and to what extent wetlands may be altered, adhering to the minimum criteria for such activity provided in section 2.3.1.1 of the RPP.

Key Agencies
ATM, ConC, TC

Timing
Adopt regulatory changes by 1996.

4.2.3 Provide incentives to restore altered or degraded wetlands, buffer areas and ponds.

- (I) Implementation Considerations
Conservation Commission, Planning Board, Board of Health, and Waterways Committee should work together to develop meaningful incentives (regulatory or otherwise) for property owners and developers to achieve the desired objectives.

Key Agencies
ATM, ConC, PB, BOH, WWC

Timing
Adopt any regulatory changes by 1996.

4.2.4 Develop/maintain guidelines for best management practices for wetland related agriculture.

- (I) Implementation Considerations
Conservation Commission should work with the Cooperative Extension Service to develop appropriate guidelines for operation of cranberry bogs so as to be as environmentally sound as possible. As best management practices evolve over time, routine review of the guidelines for the need to update is warranted.

Key Agencies
ConC

Timing
Adopt regulatory changes by 1996.

4.2.5 Develop regulations for soil erosion and sediment control for all properties within 1,000 feet of a vegetative wetland to prevent siltation impacts on wetlands.

- (I) Implementation Considerations
Conservation Commission and Planning Board should prepare appropriate soil erosion and sediment control requirements for site disturbances within 1,000 feet of a vegetative wetland and determine which agency shall administer them.

Key Agencies
ATM, ConC, PB, TC

Timing
Adopt regulatory changes by 1996.

4.2.6 Pursue amendment to the existing Town of Harwich Wetland By-Law so as to improve wetland protection by including the following types of provisions:

- a. Protection of vernal pools and isolated wetlands.
- b. Expansion of Conservation Commission jurisdiction beyond 100 feet, where appropriate.
- c. Improved enforcement.

- d. The ability to hire consultants to review applications.
- e. A definition of wetland boundaries which is acceptable to the Board of Health as well as a mutually acceptable standard for siting new subsurface disposal systems near wetland areas.
- f. A system for improving the function of failed septic systems which may adversely impact wetland areas.

(I) Implementation Considerations

The Conservation Commission, in consultation with the Board of Health should consider and prepare the appropriate Wetland By-Law amendments for consideration and action by Town Meeting.

Key Agencies

ATM, ConC, BOH, TC

Timing

Adopt regulatory changes by 1996.

Natural Resources - WILDLIFE AND PLANT HABITAT**Issues Summary**

The primary issue under this section is the ongoing loss/degradation of habitat through conventional land development and zoning practices and the lack of a land acquisition program. Of critical importance is the preservation of existing species populations and diversity and particularly the rare species habitat identified in town.

A full discussion of habitat issues is contained in Section V - Physical Characteristics compiled during the data gathering phase of this plan. Also, a summary of the findings in Section V are contained in a document entitled "Technical Findings Summary." Both are available for review in the Harwich Planning Department office.

Overview of Recommendations

The plan proposes the adoption of five types of guidelines as well as enhancements to the design of permanent open space to optimize habitat preservation.

Relation to Other Sections

Much of the protection proposed for habitat areas is embodied in the Land Use section since it deals with land development patterns and techniques for preserving open space. For a similar reason, this section directly relates to the Open Space and Recreation section.

Technical Aspects

The following are explanations of some of the key terms and concepts which appear in this section:

Critical wildlife and plant habitat - Consists of habitat areas of rare (threatened or endangered) plant and wildlife species and species of special concern as generally identified and mapped by the Natural Heritage and Endangered Species Program (administered by the Massachusetts Department of Environmental Management) and other critical habitat areas as identified and mapped by the Association for the Preservation of Cape Cod's "Cape Cod Critical Habitats Atlas," or town authorities. Copies of the atlas are available for review in the offices of the Harwich Planning Department and the Cape Cod Commission.

General wildlife and plant habitat - All undeveloped areas which are not considered critical wildlife and plant habitat areas.

Habitat management plan - A written statement of specific measures to be implemented which will preserve, protect and maintain some or all of the habitat areas on a parcel or parcels of land. Such a plan, when required, would likely be a condition of approval for a development permit.

Vernal pool - Seasonal water bodies which hold water for at least two consecutive months in the spring and/or summer during most years and which are free of fish. Certain frogs and salamanders breed exclusively in vernal pools and fish-free water. (Source: Cape Cod Critical Habitats Atlas).

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Wildlife and Plant Habitat goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91). Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

5.1.0 Goals

- 5.1.1 To prevent loss or degradation of critical wildlife and plant habitat, to minimize the impact of new development on wildlife and plant habitat and to maintain existing populations and species diversity.

5.2.0 Recommendations

- 5.2.1 Incorporate the following guidelines into town by-laws and regulations, as appropriate, for each of the respective land development permitting agencies:
- A. Guidelines for determining significant impact of development on rare wildlife and plant habitats.
 - B. Guidelines and requirements for when and how to do a habitat management plan.
 - C. Guidelines and requirements for clearing in areas of critical wildlife and plant habitat.
 - D. Guidelines for habitat assessment.
 - E. Guidelines for general clearing and maintenance/restoration of habitat.
 - F. Prohibit any disturbance within any vernal pool or within 100 feet thereof.
 - G. Design requirements for open space to provide best possible protection and quality of habitat.

(I) Implementation Considerations

The conservation and planning agencies should work together to produce appropriate amendments to Town By-Laws and regulations to achieve the desired objectives of habitat protection.

Implementation of item (F) will require accurate mapping and classification of vernal pools in town, consistent with the methodology employed by the state Natural Heritage and Endangered Species Program.

Key Agencies

ATM, ConC, PB, TC

Timing

Adopt regulatory changes by 1996.

ECONOMIC DEVELOPMENT**Issues Summary**

The Harwich economy is based largely on income from tourism, retirees, and seasonal homeowners. However, there is a high concentration of low wage, seasonal jobs. Overall, the economy would be improved by greater diversity along with growth in business activity.

During the data gathering phase of this plan, a document entitled Section IX - Economic Characteristics was compiled. This document which is available for review in the Harwich Planning Department office, contains extensive information about the nature of the Harwich economy but is too voluminous to review here. A summary of this information is contained in a related document entitled "Technical Findings Summary", also in the Planning Department office.

Overall, the findings indicate a need to provide for economic growth through continued year-round and seasonal job creation, diversification into nonseasonal and off-season business activity, and support of the cranberry and fishing industries. It was found that adequate but not excessive, commercial space potential would be available to meet the projected demand for retail goods and services by the build-out population. However, industrial space potential appeared to be greater than the projected demand, based on current usage patterns. While such potential space might be good to have as a reserve, it would do little to enhance the tax base as it was demonstrated that developed commercial and industrial land returns greater revenue yet demands fewer services than undeveloped or residential land.

Overview of Recommendations

Consistent with the Land Use section, this section promotes the fulfillment of the growth center concept which would channel economic activity into vital, compact centers so as to avoid an intensive commercial strip from one end of Route 28 to the other in Harwich. The centralization of commerce as well as residential activity in the growth centers would allow for better traffic management, enhance the village atmosphere, more efficiently provide municipal services, and preserve the character of the less developed areas.

The plan seeks to promote the use of incentives in concert with reasonable regulations, to allow future development activity to help achieve many of the goals stated herein. Numerous individual measures are recommended to stimulate and diversify the local economy, improve the appearance and function of existing strip development, and support the cranberry and fishing industries.

Relation to Other Sections

As mentioned above, there is considerable overlap of this section and the Land Use element. Between the two, it is intended to create and/or enhance the vitality of business centers by making them attractive, practical, and interesting areas.

The economic development recommendations also relate to affordable housing by promoting creation of higher wage year-round employment opportunities which could lessen the demand for subsidized housing. There are also meaningful connections to the Historic Preservation/Community Character, Transportation, and Capital Facilities sections.

Technical Aspects

The following are explanations of some of the key terms and concepts which warrant clarification as they appear in this section:

Affordable lodging - Lodging priced below that of luxury (high quality) lodging so as to accommodate families with average incomes and seasonal employees.

Design compatibility - Relative consistency of design of new development with that of existing development in the area.

Design guidelines - A document to be produced by the Town which will include suggestions as to what features of design would be considered complementary to existing designs.

Development bonuses (zoning bonuses) - The granting during the development review process of additional development capacity such as more site coverage or fewer parking spaces than required, in exchange for provision of a public benefit or amenity and/or advancement of one or more goals in this plan.

Growth center - An area with definite boundaries in which growth is permitted and encouraged. See also Land Use section.

High quality lodging - Lodging which commands prices on the high end of the lodging price spectrum due to above average or exceptional facilities and service.

Level of service E - A condition of a roadway segment or intersection in which there is considerable congestion but not gridlock.

Mixed use development - Commercial and residential uses in an area where buildings and/or parcels are shared by both use types.

Nitrate-nitrogen loading standard - An upper limit for the contribution of nitrate-nitrogen into the ground water of a particular area.

Pre-permitted - A use or uses fitting certain size and location criteria which is entitled to automatic approval because the various impacts and issues have already been considered and worked out by the permitting agencies.

Promotion and site search committee - A committee to be appointed by the Board of Selectmen to develop and seek implementation of measures to promote Harwich as a positive place to establish a business, live in, and enjoy. In addition, the committee would assist prospective businesses in finding a suitable location within the Town.

Strip development - Development, usually one lot deep, and arranged in linear fashion along a major roadway, where individual curb cuts, signs and parking areas typically serve each business establishment.

Transferable Development Rights - The existing rights under zoning to build residential or commercial structures which, instead of being built on the land where the rights currently exist, can be transferred to parcels in the same areas or in completely different areas of town.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Economic Development goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91). Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

6.1.0 Goals

- 6.1.1 To promote businesses that are compatible with Harwich's environmental, cultural, and economic strengths in order to ensure balanced economic development.
- 6.1.2 To provide appropriate locations for economic development so as to preserve Harwich's environment and cultural heritage, minimize adverse impacts, and enhance the quality of life.
- 6.1.3 To encourage the creation and diversification of year-round employment opportunities in Town.
- 6.1.4 To maintain opportunities for the traditional occupations and economic diversity associated with agricultural activities.
- 6.1.5 To encourage the provision of seasonal lodging facilities to house employees of local seasonal businesses.

6.2.0 Recommendations

- 6.2.1 Encourage commercial/industrial development activity within designated commercial and industrial growth areas and scale down commercial potential outside of growth centers.

(I) Implementation Considerations

See 6.2.1.1 and 6.2.1.2

- 6.2.1.1 Using a Transferable Development Rights (TDR) system, commercial and mixed use development should be permitted to intensify significantly in the growth centers which would be the receiving area for development rights. Existing commercial zones outside the growth centers would be the areas from which commercial and residential rights would be transferred. This system will permit growth to be directed toward the growth centers while maintaining property rights and economic potential in the nongrowth areas.

(I) Implementation Considerations

Amend Zoning By-Laws and Map to establish growth centers as receiving zones for commercial and residential development rights from areas outside the growth centers, including appropriate development standards for the growth center areas.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

- 6.2.1.2 Zoning changes to relax development limitations and provide incentives for design compatibility in the growth centers should be implemented. The following specific concepts should be advanced in commercial growth centers:
- A. Expand boundaries of commercial zone.
 - B. Encourage rehabilitation or reuse of existing structures.
 - C. Set area wide nitrate-nitrogen loading standard to 10 parts per million except in water resource protection districts and marine recharge areas.
 - D. Permit traffic flow to drop to level of service E.
 - E. Allow private sewage treatment plants.
 - F. Relax open space requirement.
 - G. Permit trade-offs of certain zoning standards to facilitate the provision of incentives.

- (I) Implementation Considerations
Amend Zoning By-Law to achieve items A through G under 6.2.1.2.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning changes by 1996.

- 6.2.2 Where feasible, emphasize incentives rather than regulations to achieve consistency with guidelines for use promoting complementary uses and compatible building and site designs.

- (I) Implementation Considerations
Develop guidelines for use compatibility and design consistency and include in point system described in recommendation 13.2.2.1 (point system for community character). Continue to investigate new means for providing incentives.

Key Agencies
ATM, PB, TC

- 6.2.3 In order to provide appropriate stimulation of the Town's economy, the following concepts should be pursued upon adoption of this plan (Key agencies shown in parentheses and consideration of all zoning changes proposed to occur by 1996):

- 6.2.3.a Encourage and facilitate growth of the marine science and environmental education industries.

- (I) Implementation Considerations
Amend Zoning By-Law to remove any unnecessary regulatory obstacles to the establishment of such facilities. Special considerations for height and bulk of institutional structures. (ATM, PB, TC)

- 6.2.3.b Encourage off-season tourism through greater promotion of the Town's historical, cultural, environmental, and educational assets. This should include a focus on building a reputation as a place of abundant cultural activities throughout the year such as festivals

and other special events, musical, theatric, and dance performances, arts and crafts events, cultural and environmental education forums, classes, and lectures, antique shows, historic house tours, etc.

(I) Implementation Considerations

A Committee on Tourism (COT) should be appointed and given the charge of developing a cultural enhancement program which would provide specific guidance on how to develop a reputation for year-round cultural activities, including recommendations for any regulatory changes that might be needed. (BOS, (COT), PB, TC)

6.2.3.c To facilitate off-season tourism and special indoor events year-round, high quality lodging and conference, performance, and teaching facilities should be encouraged. Affordable lodging facilities should also be encouraged.

(I) Implementation Considerations

Amend Zoning By-Law to remove unnecessary obstacles to the establishment of such uses. (ATM, PB, TC)

6.2.3.d A fully staffed visitor center and promotion (and site search) committee should be established.

(I) Implementation Considerations

The proposed COT should also serve as a town designated agency to work with the Harwich and Cape Cod Chambers of Commerce and other tourism agencies to help promote Harwich as a tourism destination. The COT should investigate ways to provide a fully staffed visitors center. (BOS, (COT))

6.2.3.e Provide incentives for growth of the health and human services industry.

(I) Implementation Considerations

Tax breaks and/or zoning incentives to health care and human service facilities (both profit and nonprofit) appear warranted to encourage the establishment of such facilities. Sale of town-owned land at a below market price for these uses would also be a meaningful incentive. Further research may yield additional potential incentives. (BOA, ATM, PB, TC)

6.2.3.f Build on the existing economic base by enhancements to the climate for the retail and service industries.

(I) Implementation Considerations

Implementation of the growth center and TDR concepts along with streetscape improvements will provide a more positive climate for retail and service activity.

Greater town cooperation with the Harwich Chamber of Commerce (perhaps through the proposed Committee on Tourism or Economic Enhancement Council (see (g) below)) to optimize the promotion of business activity, should also be pursued. (ATM, PB, TE, DHM, (COT), (EEC))

- 6.2.3.g Provide incentives for job creation by new or existing businesses.
- (I) Implementation Considerations
A revolving loan fund could be established to match other applicable grant programs in assisting small business to expand and create jobs. This could be administered by an economic enhancement council appointed by the Board of Selectmen. (ATM, BOS, (EEC))
- 6.2.3.h Design and construct improvements in public spaces such as promenades, ornate street lighting, street furniture and landscaping, special sidewalk and crosswalk treatments, curbing, pocket parks, and public art.
- (I) Implementation Considerations
See 1.2.3.1.1 and 1.2.14
- 6.2.3.i Encourage redevelopment of underutilized existing space in growth areas.
- (I) Implementation Considerations
Integrate a phasing approach under the TDR system which would facilitate and encourage full utilization of existing space prior to expansion of the commercial area. (ATM, PB, TC)
- 6.2.3.j Permit cottage industries (home-oriented business in structures other than a home) on large residential lots in rural areas.
- (I) Implementation Considerations
Amend Zoning By-Law to establish this as a new use category and provide reasonable standards to permit cottage industries (distinct from but in addition to home occupations) and protect abutting properties. (ATM, PB, TC, BOH)
- 6.2.3.k Establish attractive industrial park(s) in industrial growth areas in which sites for specific types or uses would be pre-permitted and ready for construction.
- (I) Implementation Considerations
See Section 1.2.3.4.b.
- 6.2.3.l Prohibit large-scale manufacturing and warehousing everywhere but in an industrial park.
- (I) Implementation Considerations
Amend Zoning By-Law accordingly. (ATM, PB, TC)
- 6.2.3.m Guide large-scale commercial/industrial facilities to growth areas designated to accommodate regional uses.
- (I) Implementation Considerations
Amend Zoning By-Law to set size limits in nonregional growth centers. (ATM, PB, TC)

6.2.3.n Streamline the permitting process.

(I) Implementation Considerations

In addition to allowing more applications requiring special permits to be reviewed by the Planning Board to effect a "one-stop" approach to Board review, more uses could be allowed as-of-right, provided they meet specified performance standards on topics such as traffic generation, buffering, odors, landscaping, nitrate loading, lighting, litter control, etc.

Formation of an interdepartmental development review team which would help an applicant bring an application into technical compliance prior to the formal hearing could reduce potential delays in permitting. (ATM, PB, TC)

6.2.3.o Encourage year-round agricultural business activity through greenhouse agriculture in rural areas.

(I) Implementation Considerations

As an incentive to participate in the TDR program, limited greenhouse agriculture could be permitted on large parcels from which development rights have been transferred.

Encouragement of cooperative farming through small grants to help pay for shared power/heating/water/storage facilities could also be helpful. (ATM, PB, BOS, TC)

6.2.4 Provide incentives for improvements to the appearance and function of existing strip development, including development bonuses for the following:

- A. Reductions in the number and size of curb cuts.
- B. Consolidating parking used by several businesses.
- C. Adding landscaping.
- D. Screening or relocating parking.
- E. Facade improvements.
- F. Achieving consistency with design guidelines.
- G. Provision of public art.
- H. Provision of extra green space.

(I) Implementation Considerations

Amend Zoning By-Law to provide zoning bonuses or short-term tax abatements to property owners who improve their property consistent with 6.2.4 A through H.

Key Agencies

ATM, PB, TC

Timing

Adopt amendments by 1996.

6.2.5 Protect, maintain, and enhance economically productive resource based areas such as shellfish areas, fishery habitat, and cranberry bogs.

- (I) Implementation Considerations
Amend Zoning By-Law to include standards for new development and redevelopment within reasonable impact areas affecting the resource areas.

Key Agencies
ATM, PB, BOH, ConC, HM

Timing
Adopt amendments by 1996.

- 6.2.6 A revenue study committee should be formed to investigate means of generating revenue to supplement the difference between what the increasingly limited growth of the tax base can produce and what the Town needs to operate without sacrificing needed services.

- (I) Implementation Considerations
The Board of Selectmen should appoint the proposed committee. The proposed committee should convene regularly over the next five years and file reports annually or more frequently. Its charge should be to identify practical means for generating municipal revenue beyond the capacity of the local property tax or propose appropriate revisions to the state property tax laws.

Key Agencies
BOS

Timing
Appoint committee following adoption of this plan.

- 6.2.7 Encourage/support the formation and function of a committee with broad representation of interests within the Town and sanctioned by the Board of Selectmen to produce and update a detailed economic strategy which is consistent with this plan and make recommendations for any necessary amendments to this plan based on further study of the Town's economic health and future.

- (I) Implementation Considerations
This committee could serve as the Partnership for Economic Development Committee advocated by the State. It could also serve as the economic enhancement council referred to in 6.2.3.g(I)

Key Agencies
BOS

Timing
Pursue following adoption of this plan.

Issues Summary

Of primary concern is the proper management of increased traffic levels between the present and full development in the Town. During the data gathering phase of this plan, a document entitled Section VIII - Community Facilities was compiled. In it are traffic projections by village and a wide array of other transportation related findings. A copy of this document is available for review in the office of the Harwich Planning Department.

The greatest expected increases in traffic volume through build-out would be in East Harwich and Harwich Port where commercial growth is expected to occur. In East Harwich and other less developed villages, traffic increases will occur as the remaining vacant land is developed for housing.

A number of locations in town which have experienced relatively high traffic, accident frequency or are known to be deficient in their design were listed and identified as needing correction.

About half of the public parking facilities in town were found to need repair and/or expansion. Most of these facilities had seasonal parking supply problems.

Bicycles were found to be an increasingly popular alternative mode of transportation but adequate facilities for such vehicles were non-existent, except for the Cape Cod Rail Trail but this too has some significant safety problems.

Sidewalks were cited as a major need in all villages of the Town. Even where they exist, they are deficient in many ways. Recreational walking trails were noted as an underemphasized asset since so much of the year-round and seasonal populations enjoy walking.

Public transportation within Harwich, another alternative mode which could reduce roadway congestion, was only provided by Cape Cod Regional Transit Authority's "b-bus" which operates on demand and by appointment, similar to a taxi. No regularly scheduled service between villages was available.

Of great concern regarding any physical improvements to the transportation network is the need to give due regard to preserving community character.

Overview of Recommendations

The plan seeks to prioritize transportation improvements including road alterations, bike lanes, and sidewalks, in all of the growth centers and then to provide appropriate bike and pedestrian facilities for safe access to and ultimately linkage of the growth centers. Provision of regular transit service within the Town is also recommended. Together, these measures are expected to minimize congestion levels town-wide.

A traffic safety committee is recommended to address intersections and road segment deficiencies and other traffic safety issues.

Numerous miscellaneous recommendations seek to provide a safe, efficient, and compatible transportation network in town.

Relation to Other Sections

The recommendations of this section build on and support the growth center concept advanced by the Land Use and Economic Development sections.

Technical Aspects

The following are explanations of the key terms and concepts which warrant clarification as they are presented in this section:

Bike Lane - A dedicated paved space, 3 to 5 feet in width, adjacent to the edge of a roadway.

Bikeway - A way, either paved or hardpacked, which provided for exclusive use by bicycles, skates, and pedestrians.

Channelization - Provision of a marked path for vehicles seeking a certain direction to follow. Road lanes with pavement arrows to go straight or turn right are examples of channelization.

Level of Service (LOS) - A condition of a roadway segment or intersection which measures the degree of traffic movement or congestion under specified circumstances. The optimal condition is LOS A which is analogous to free flowing highway traffic. The worst is LOS F which is at or near gridlock.

Mitigation - The lessening of an impact.

Pedestrian/bicycle/transit facilities - Pedestrian facilities include sidewalks, benches, crosswalks, accessible curbing at crosswalks and signal activator buttons at signalized intersections. Bicycle facilities are bike lanes, bike racks or other storage equipment, and appropriate signage. Transit facilities include designated bus/shuttle stop locations with appropriate signage and posted route information and may also include shelters at some or all bus stops.

Regional transportation plan - The annually developed transportation plan for Barnstable County, prepared by the Cape Cod Commission. Such a plan typically includes a list of specific transportation projects within the towns for which federal construction funding would be sought.

Transit or mass transit - A network of vehicles and routes managed so as to provide for the regular movement of people.

Transit facilities - In the context of this plan, such facilities include designated bus/shuttle stop locations with appropriate signage and posted route information and may also include shelters at some or all bus stops.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Transportation goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91), except as provided below. Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

RPP Minimum Performance Standard 4.1.1.3 -

Sections which state that structural mitigation (new signalization, new road links, intersection widening, road widening, interchange construction or improvements) is acceptable only if it is demonstrated that other forms of mitigation, as defined in the RPP, are found to be inadequate.

Reason for Inconsistency - Sections 1.2.3.1.d,e, and f propose structural mitigation at the intersection of Routes 137 and 39 in the East Harwich growth center. The report of the Planning Board's traffic consultant revealed that future growth in the subject area would result in a level of service below that specified in this plan (LOS E for growth centers), based on the existing pavement configuration and traffic controls.

Given the designation of the area as a growth center, as a significant growth management measure, it is necessary to accommodate future traffic with adequate facilities and appropriate services. The plan calls for structural improvements but it also recommends establishment of a local transit system to serve the growth centers. It is not known if or when such a system would actually be operational. Similarly, other alternatives to automobiles such as sidewalks and bike lanes are also proposed without a clear indication of their actual installation date.

Section 1.2.3.1.e recommends construction of widening improvements when average daily traffic passes 17,000 vehicles per day or as warranted by prevailing conditions. If the recommended alternatives to automobiles succeed in keeping the number of vehicle trips below this threshold, then construction would not be necessary. If they do not succeed, then construction would be needed to provide for adequate traffic safety.

The primary purpose of RPP section 4.1.1.3 is to prevent the degradation of community character by structural improvements to roadways. However, given the relatively recent loss of the traditional wooded and rural character of the subject intersection in the 1980's, it would not be fruitful to adhere to the letter of RPP section 4.1.1.3 in this area because the proposed improvements would have a negligible community character impact.

Also, Harwich Center recommendation 1.2.3.6.f (formerly 1.2.3.7.f) was identified as being in conflict with RPP section 4.1.1.3. It must be noted that the implementation considerations for this section in no way represent a commitment to structural mitigation. Again, if the recommended alternatives to automobiles perform as intended, then some or all structural improvements may not be needed.

7.1.0

Goals

7.1.1

To develop a transportation plan in Harwich for present and future year-round needs which promotes safe, convenient, accessible, and economical transportation and is consistent with the Town's recreational needs and its historic, scenic, and natural resources.

7.1.2 To encourage alternate modes of transportation so as to reduce dependence on private automobiles.

7.2.0 Recommendations

7.2.1 Prioritize improvements to roadways and pedestrian/bicycle and transit facilities in growth centers (as provided in 7.2.1.1 through 7.2.1.5) and throughout the Town and seek inclusion in regional transportation plan for possible construction grant fundings.

(I) Implementation Considerations

The proposed Traffic Safety Committee, Engineering Department, and Division of Highways and Maintenance should work with the Planning Board, Capital Outlay Committee and Board of Selectman to establish a priority ranking for construction of transportation improvements. Generally, the growth center improvements would receive a higher ranking based on the future concentration of travel through such areas. Insertion of projects into the capital outlay plan would follow the priority ranking process. This process should be followed by submission of annual priority lists for inclusion in the regional transportation plan prepared by the Cape Cod Commission.

Key Agencies

(TSC), PB, BOS, COC, TE, DHM, ATM

Timing

Commence process following establishment of Traffic Safety Committee.

7.2.1.1 At Routes 137/39 intersection:

- A. Acquire adequate rights-of-way to implement widening and traffic channelization on all four legs of intersection (per MSI report). Include sidewalk and bike lane facilities.
- B. Design improvements for construction.
- C. Seek inclusion of area in regional transportation plan and pursue federal, state and local funding for construction.

(I) Implementation Considerations

The Traffic Safety Committee will need to review the report of the Planning Board's traffic consultant relative to this area and determine how much right-of-way to acquire and when. Completion of this step would require hiring a consultant to prepare preliminary design alternatives and final drawings for whatever work there would be to do, either all at once or in phases. The TSC would need to work closely with the other key agencies identified below in arriving at a final design.

Key Agencies

(TSC), PB, TE, DHM, BOS, COC, ATM

Timing

Commence after formation of Traffic Safety Committee.

7.2.1.2

In Harwich Port and West Harwich growth areas:

- A. Work with Transportation Department of Cape Cod Commission and Mass-DPW to produce adequate designs for relevant segments of Route 28 pursuant to findings of Route 28 corridor study.
- B. Incorporate adequate pedestrian/bicycle/transit facilities.
- C. Incorporate environmentally sound method of storm drainage management.
- D. Design improvements for construction.
- E. Seek inclusion in regional transportation plan and pursue federal, state, and local funding for construction.

(I) Implementation Considerations

The Traffic Safety Committee, Engineering Department, and Division of Highways and Maintenance should be the town agencies to work with the County and State. Hiring of consultants by the Town may be necessary to complete certain design work for roadway and drainage improvements. Town funding of design work would be likely to precede eligibility for any construction grants.

Key Agencies

ATM, (TSC), TE, DHM, BOS, PP, PB

Timing

Commence after formation of Traffic Safety Committee.

7.2.1.3

In Harwich Center growth area:

- A. Develop consensus on best approach to traffic management in core of the center.
- B. Incorporate adequate pedestrian/bicycle/transit facilities.
- C. Design improvements for construction.
- D. Seek inclusion in regional transportation plan and pursue federal, state, and local funding for construction.

(I) Implementation Considerations

The Traffic Safety Committee will need to conduct a series of public hearings to consider the many facets of addressing the traffic congestion and safety problems in Harwich Center, using specific guidance from the Planning Board's report on the area prepared by its traffic consultant. Any changes in traffic flow or regulation would involve the Police Department and probably the Massachusetts Department of Public Works.

Consultants may be needed to augment in-house design work on any structural improvements. Completion of design work would likely be a pre-requisite to obtaining any construction grants.

Key Agencies

ATM, (TSC), TE, DHM, BOS, PD, PB, MDPW

Timing

Commence after formation of Traffic Safety Committee.

7.2.1.4

In Pleasant Lake growth area:

- A. Conduct design study to determine the appropriate improvements where growth will impact local and regional road network, including the intersections of: Route 124/Queen Anne Road, Route 124/bike trail at the Exit 10 interchange (if applicable), and Route 124/ Headwaters Drive.
- B. Incorporate adequate pedestrian/bicycle/transit facilities.
- C. Design improvements for construction.
- D. Seek inclusion in regional transportation plan and pursue federal, state, and local funding for construction.

(I) Implementation Considerations

The Traffic Safety Committee would need to work with a consultant to determine appropriate improvements and then proceed to the design-for-construction phase using in-house and consultant resources. Since the State has jurisdiction over this area, their cooperation and involvement in any design study would be necessary. State funding of the design work is also a possibility but if the Town wants the construction done sooner than later, then it can advance the time of construction by completing the design work.

Key Agencies

(TSC), TE, PD, DHM, PB, BOS, AIM, MDPW

Timing

This work can be commenced when development activity in the area starts to take place.

7.2.1.5

In North Harwich industrial growth areas:

- A. Acquire adequate rights-of-way for safety, drainage, and utility improvements along Queen Anne Road.
- B. Incorporate adequate pedestrian/bicycle/transit facilities.
- C. Design improvements for construction.
- D. Seek inclusion in regional transportation plan and pursue funding for construction.

(I) Implementation Considerations

The Board of Selectmen along with the highway, engineering and safety departments, should conduct public hearings on this topic in order to reach a consensus on how to address the conflicting interests. Once an approach has been determined, it may be necessary to hire a consultant to augment the in-house design capacity for this work. Again, town-sponsored design work will facilitate eligibility for construction grants.

Special zoning provisions may be necessary to prevent nonconformities from being created by acquisition of property.

Key Agencies

(TSC), TE, DHM, BOS, PD, PB, AIM

Timing

Commence after formation of Traffic Safety Committee. Adopt any zoning amendments required by 1996.

7.2.2 Design and construct adequate sidewalks and bikeways/bike lanes so as to link growth areas and facilitate non-automobile access to growth centers from outlying residential neighborhoods.

(I) Implementation Considerations

The Traffic Safety Committee and Bike Path Study Committee should jointly examine the most appropriate ways to link the growth centers and outlying neighborhoods for cross-town pedestrian and bike travel. All segments of the pedestrian and bicycle lane/path network should be evaluated and ranked for priority according to standard criteria to be developed by the committees. The whole network should be developed over time according to a multi-phased plan. A consultant would be needed to augment in-house design resources. Construction grant funding could be sought through the County Transportation Improvement Plan as design work is completed on each of the numerous phases.

Key Agencies

(TSC), BPSC, TE, DHM, MDPW, BOS, PB, PD, TC, ATM

Timing

Commence after formation of Traffic Safety Committee.

7.2.3 To ensure the provision of public transportation among the growth centers, encourage and facilitate the operation of a new public transit system (or promote expansion of existing services) through and/or within Harwich. Form a public transportation committee to investigate ways to provide and encourage the use of public transit and establish appropriate transit facilities throughout the Town.

(I) Implementation Considerations

The Board of Selectmen should appoint a public transportation committee to examine the financial, market, legal, licensing, and operational aspects of establishing fixed route transit service by one or more mini-buses and/or the Cape Cod Regional Transit Authority. Publicly owned and privatized options should be investigated and reported to the Board. Also to be considered is the goal of linking growth centers and other key destinations with populated areas and the location and configuration of bus stops. If a local transit system appears feasible, then the committee should also examine ways to promote its use.

Key Agencies

BOS, (PTC), TC

Timing

Implement following adoption of this plan.

7.2.4 Set an appropriate threshold for developments relative to when a traffic impact analysis would be needed to support an application for development. Also develop minimum criteria for the content of a traffic impact analysis and provide for funding of such work through a development application fee system.

(I) Implementation Considerations

The Zoning By-Law should be amended to specify what minimum conditions would require an applicant to submit a traffic impact analysis and what the analysis must address. Planning Board regulations should also be amended pursuant to Chapter 593 of the Acts of 1989, to include an applicant-funded special account or some other applicant-sponsored funding mechanism, for the purpose of hiring a traffic consultant to evaluate traffic analyses for the Board.

Key Agencies

ATM, PB, TC

Timing

Implement following adoption of this plan.

7.2.5 Develop transportation models to analyze traffic level of service (LOS) indicators for growth centers and incorporate LOS objectives into the Zoning By-Law.

(I) Implementation Considerations

The Planning Board and Traffic Safety Committee should work with the Transportation staff of the Cape Cod Commission to develop traffic models for the growth centers to enable the establishment of realistic level-of-service standards in the Zoning By-Law. New development in the growth centers would need to satisfy such standards.

Key Agencies

PB, (TSC), CCC, BOS, ATM

Timing

Initiate following adoption of this plan.

7.2.6 Develop a roadway improvement guidelines manual to reflect local construction standards and acceptable mitigation measures and requirements.

(I) Implementation Considerations

The Division of Highways and Maintenance should coordinate with the Traffic Safety Committee and Planning Board to produce a set of construction guidelines for the various types of expected roadway improvements in town.

Key Agencies

DHM, (TSC), PB

Timing

Commence after formation of Traffic Safety Committee.

7.2.7 Establish a parking agency to provide public parking facilities within any or all business and industrial areas of the Town.

- (I) Implementation Considerations
A public parking agency should be created in a manner provided by law. Its purposes would be to work with other town agencies to plan, design, finance, construct, operate, and maintain existing and new public parking facilities within growth centers. It should pursue assembly of appropriate pieces of property to concentrate parking facilities so as to minimize curb cuts and the intrusion of parking into yard areas.

Key Agencies
ATM, BOS, TC

Timing
Implement after adoption of this plan.

7.2.8 Discourage dead-end roads.

- (I) Implementation Considerations
The Planning Board should maintain its current regulations which provide for interconnection of new, existing and future roadways through the subdivision process.

Key Agencies
PB

Timing
No action required.

7.2.9 Provide incentives for the installation of plantings along public and private roadways.

- (I) Implementation Considerations
Tax incentives should be considered for the provision and maintenance of plantings within the unpaved portions of street layouts to help re-vegetate and beautify the edges of existing and future roadways in town. Programs should be organized by street to optimize the visual effect of the plantings. This effort should be coordinated by the Tree Warden and Conservation Commission.

Zoning and subdivision regulations should be amended to include incentives and/or requirements for provision of plantings along the street edge in site plans and subdivision plans. Guidelines for preferred species type and placement should be adopted by all three administering agencies.

Key Agencies
TW, ConC, BOA, BOS, PB, ATM, TC

Timing
Implement after adoption of this plan.

7.2.10 Prohibit major access to growth center facilities through lower-growth areas.

- (I) Implementation Considerations
Amend Zoning By-Law to specify the ban on commercial access through residential zones.

Key Agencies
PB, ATM, TC

Timing
Adopt zoning language by 1996.

- 7.2.11 Provide incentives for accommodating pedestrian and bicycle traffic on commercial properties and in and between subdivisions.

- (I) Implementation Considerations
Amend Zoning By-Law and subdivision rules to provide for incentives and/or requirements to incorporate bicycle and pedestrian access and passage through new development.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning changes by 1996.

- 7.2.12 Retain ownership of all town transportation rights-of-way.

- (I) Implementation Considerations
As a matter of policy, the Board of Selectmen should act to preserve existing rights-of-way, even if no practical use for such rights is known. Future modes of travel will still need routes to travel on so future acquisition of rights currently owned by the Town should be avoided.

Key Agencies
BOS

Timing
Complete after adoption of this plan.

- 7.2.13 Form a traffic safety committee to study the safety aspects of the intersections and road segments with high accident frequencies as identified in data collection Section VIII, Community Facilities and develop a detailed action plan.

- (I) Implementation Considerations
The (TSC) should work with the relevant town agencies to study groups of intersections according to a priority system established by the (TSC). It should then recommend a detailed action plan for each intersection or group of intersections so as to enable corrective actions to be programmed for completion over time with the most dangerous intersections receiving the earliest attention.

Key Agencies
(TSC), DHM, PD, TE, MDPW

Timing
Commence after formation of Traffic Safety Committee.

Issues Summary

With closure of the Town's landfill likely to occur in 1994 or 1995, the stakes of solid waste management will become much higher than at present. Since it costs the Town money to dispose of its solid waste, optimal methods for efficient and economical disposal of solid waste will need to be developed.

The greatest hazardous waste issue involves assuring the proper handling, storage and disposal of toxic substances, particularly in water resource areas.

Overview of Recommendations

The approach of this plan is straightforward in that it recommends providing adequately for recycling, storing, composting and handling of solid waste. It also promotes reasonable regulation and education as means for proper management of hazardous waste.

Relation to other sections

Since adequate solid waste facilities would be fostered by the Town, there is a connection to the Capital Facilities and Infrastructure section.

Technical Aspects

The following are explanations of some of the key terms and concepts which appear in this section:

Hazardous waste - Any toxic by-product of a process which requires additional handling to be re-used or disposed of properly or any toxic material which is spilled or accidentally released from its container. Some examples of potential hazardous waste include gasoline, heating oil, photograph and X-ray developing chemicals, and radioactive materials.

Massachusetts Hazardous Waste Regulations, 310 CMR 30.00 - The section of state regulations which deals with hazardous waste. This document contains a more precise definition of hazardous waste than given above. A copy of this document is available for review in the office of the Harwich Health Department.

Recharge areas to ponds and embayments - Areas which contribute ground water to specific ponds and salt water bodies such as harbors and other estuaries.

Responsibility and awareness program - An initiative to emphasize the role each property user needs to play in protecting the resources their activities may impact.

Solid waste - Any material discarded which is neither human waste nor hazardous waste. Examples include household trash, yard debris, demolition debris, old appliances & furniture, etc.

Water resource recharge areas - Areas which contribute groundwater or surface water to a pond, public well, or salt water embayment.

Well recharge areas - Areas which contribute ground water to an existing or future public drinking water supply well.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Solid and Hazardous Waste Management goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91). Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

8.1.0 Goals

8.1.1 To develop an integrated solid waste system that includes source reduction, recycling, and composting and to divert the maximum practical amount of municipal solid waste from incinerator and landfill facilities through recycling and composting programs.

8.1.2 To manage the disposal of hazardous wastes generated by Harwich households and businesses in an environmentally sound manner.

8.2.0 Recommendations

8.2.1 For commercial and industrial developments, require adequate space for and access to recycling areas with incentives for the provision of common storage facilities.

(I) Implementation Considerations

Amend the Zoning By-Law to include provisions which require areas for the storage and pick-up of recyclable materials in business establishments. Shared facilities could be permitted and encouraged by zoning incentives such as site coverage and/or parking bonuses. In drafting the regulations, the Planning Board should work with the Recycling Committee.

Key Agencies

ATM, PB, RC, TC

Timing

Adopt zoning changes by 1996.

8.2.2 Provide adequate town facilities and programs to recycle, compost, and process all forms of solid and routine hazardous wastes and to make usable by-products available to the public over time.

(I) Implementation Considerations

The Board of Health and Division of Highways and Maintenance should work with the Board of Selectmen and Capital Outlay Committee to establish the appropriate facilities and programs for the recycling and composting of wastes.

Key Agencies

BOH, DHM, BCS, COC

Timing

Implement after adoption of this plan.

8.2.3 Develop and distribute a hazardous waste management manual for all business licensees and home owners.

(I) Implementation Considerations

The Board of Health should seek Town Meeting or grant funding to produce and distribute hazardous waste manuals for businesses and homeowners. If funds are limited, then this information should be distributed to property owners and renters within identified recharge areas to wellfields, ponds, and harbors. The Board should also seek to have such information distributed to new homeowners and tenants.

Key Agencies

BOH, ATM

Timing

Commence after adoption of this plan.

8.2.4 Implement a responsibility and awareness program regarding hazardous wastes for all property owners in well recharge areas and recharge areas to ponds and embayments.

(I) Implementation Considerations

See 8.2.3

8.2.5 Condition development permit approvals on compliance with Massachusetts Hazardous Waste Regulations, 310 CMR, 30.00.

(I) Implementation Considerations

Applicants for development permits for uses which involve routine handling or storage of hazardous wastes should be required to submit a certification of compliance with the applicable portions 310 CMR, 30.00 in a format that should be developed by the Board of Health. Such submission should accompany commercial or industrial site plan applications, notices of intent involving commercial or industrial projects, and any commercial or industrial projects requiring Board of Health approval.

Key Agencies

BOH, PB, ConC, TC, FD

Timing

Complete regulatory changes by 1996.

8.2.6 Restrict uses involving the routine handling and storage of hazardous waste from water resource recharge areas.

(I) Implementation Considerations

Maintain appropriate zoning bans on uses involving hazardous materials and amend as needed to include other uses not specifically listed in the by-law as each is identified.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning changes as needed.

8.2.7 Consider adoption of a toxic and hazardous materials by-law or regulation.

- (I) Implementation Considerations
Model regulations produced by Barnstable County and other jurisdictions should be reviewed by the Board of Health in implementing this measure.

Key Agencies
ATM, BOH, TC

Timing
Commence following adoption of this plan.

8.2.8 Develop a detailed assessment of past and present solid/hazardous waste management conditions/options and future generation and management needs based on projected residential and commercial growth.

- (I) Implementation Considerations
The Board of Health should undertake the recommended assessment as resources permit. Grant funding should be sought from available sources and technical assistance should be obtained from the Harwich Recycling Committee, Division of Highways and Maintenance, the Mass Department of Environmental Protection, and the Cape Cod Commission.

Key Agencies
BOH, RC, DHM

Timing
Commence following adoption of this plan.

Issues Summary

The demand for services by an increasing population will need to be met in part by new and or expanded municipal facilities. During the data gathering phase of this plan, a detailed documentation of the facility needs of each department was compiled in Section VIII - Community Facilities. That document and a summary of all data gathering findings are available for review in the office of the Harwich Planning Department.

Appendix VIII - 1 of Section VIII provides a summary of the specific physical facility needs as identified by the various town agencies. Generally, most town buildings lack adequate facilities to serve disabled patrons and it will be required by law that such deficiencies be corrected. Particular urgency exists for the Brooks Free Library, the Recreation Building and Fire Department headquarters. A considerable quantity of new floor area is to be proposed between 1993 and the year 2000 (approximately 104,000 square feet). Acquisition of about 170 acres of additional land (not including conservation acquisitions) may be proposed during this period. Demand for capital improvements will be driven by significant projected growth of the residential and commercial sectors of the Town. Even without such growth, numerous facilities will need to be upgraded. Capital projects will need to be prioritized and spread out over a number of years in order to meet construction needs without sharp increases in town debt.

Overview of Recommendations

This plan seeks to integrate the gradual provision of the needed facilities over time based on need and priority ranking. It proposes the use of development impact fees, the capital outlay planning process, prudent extension of municipal infrastructure, and giving due regard to community character in the specific plans for community facilities.

Relation to other Sections

Since most community facility needs will be a function of population growth as opposed to being "caused" by this plan, they can almost be considered separate from it. However, the sections on land use, economic development, the other community facility types, open space & recreation, and community character include capital facilities and infrastructure concepts.

Technical Aspects

The following are explanations of some of the key terms and concepts which warrant clarification as they appear in this section:

Capital facilities - Buildings, land, and equipment which typically cost \$100,000 or more (over a three year period) and are expected to last. This is consistent with the Capital Outlay Committee's definition of this term.

Capital outlay planning process - An annual procedure by which capital facility needs are defined, prioritized, and scheduled for funding by the voters of the Town.

Infrastructure - The actual facilities used to provide public services and utilities such as transportation, storm water drainage, electricity, drinking water and waste disposal, among other things.
Private water supply enhancements - Measures either partially or fully funded by the Town which provide for adequate long-term drinking water quality and yield of private wells.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Capital Facilities and Infrastructure goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91). Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

9.1.0 Goals

9.1.1 To provide and maintain adequate community and regional facilities to meet community and regional needs.

9.1.2 To encourage the development and use of appropriate financing mechanisms and innovative technologies for the construction and maintenance of the Town's capital facilities and infrastructure.

9.2.0 Recommendations

9.2.1 Any infrastructure needs generated by major new development or redevelopment should be funded in a pro-rata manner by the proponents of such development, based on the calculated benefit of the work to such development.

(I) Implementation Considerations

This provision would become effective only following certification by the Cape Cod Commission that this plan is consistent with the goals and policies of the Regional Policy Plan for Cape Cod. When this occurs the Planning Board will need to develop and present for action by Town Meeting an impact fee program which would spell out the thresholds and methods for calculating and collecting fees to cover the cost of public infrastructure attributable to a particular development. Impact fees must bear a rational relationship to the infrastructure need and be based on the calculated benefit of the work to the subject development.

Key Agencies

ATM, PB, TC, BOS

Timing

Adopt impact fees program as a Zoning By-Law amendment following certification of this plan by the Cape Cod Commission.

9.2.1.1 Develop and distribute a guidance document as to what conditions warrant a contribution to the relevant infrastructure, how to provide it and when.

- (I) Implementation Considerations
To promote understanding of the impact fee system, the Planning Board should generate educational materials to supplement the language of the impact fee by-law or be a part of the by-law itself. This will enable property owners and developers to know what is expected of them relative to this issue.

Key Agencies
PB

Timing
Develop materials in conjunction with impact fee program development.

- 9.2.1.2 Maintain an up-to-date list of infrastructure needs by year and location in each of the growth areas to facilitate the calculation of fair share contributions in growth areas.

- (I) Implementation Considerations
In order to support the impact fee program, it will be necessary to have an accurate assessment of what growth-related infrastructure will be needed and when. An ongoing process for this should be established involving all town departments with facility needs. Since the Capital Outlay Committee already looks at such needs over a five-year period, it would be most practical for that committee to compile and maintain the necessary information on the future growth-related infrastructure needs for each growth area. The input and assistance of the Planning Board and Board of Selectmen would probably be necessary.

Key Agencies
COC, PB, BOS

Timing
The role of the Capital Outlay Committee should be defined following adoption of this plan and its maintenance of the infrastructure needs should be an annual effort.

- 9.2.2 Maintain a commitment to managing septic wastes on an on-site basis outside of growth areas, provided nitrogen-reducing community systems may be allowed outside growth centers to enhance water quality of development permitted by the prevailing zoning.

- (I) Implementation Considerations
Implementation simply means not considering shared sewage treatment facilities for multiple parcels which are not part of a single development project. This is necessary to maintain the proposed boundaries of the growth centers. Sewer systems outside growth centers would invite additional growth where this plan does not contemplate it.

Key Agencies
BOS, BOH, AIM

Timing
No action necessary.

9.2.3 Promote the viability of private wells in areas where extending water mains would be relatively high per new customer and where water quality can be reasonably protected over the long-term.

- (I) Implementation Considerations
This may involve a relatively small expenditure per property for private water supply enhancements in order to realize greater savings on water main installation and maintenance of adequate pumping capacity by the Town. This needs to be carefully coordinated with the planning of hydrant locations, town water system hydrology, and known and expected areas of poor water quality.

Key Agencies
BWC, FD, BOH, BOS, ATM

Timing
Commence effort following adoption of this plan.

9.2.4 Community character should have a high priority in planning for future public investments in capital facilities.

- (I) Implementation Considerations
The Board of Selectmen and/or Town Meeting should adopt a resolution to direct all departments and committees responsible for constructing capital facilities to design such facilities in a manner which complements the prevailing neighborhood character and that reasonable expenditures within project budgets to achieve this are acceptable. Such expenditures would be warranted as investments in the quality of life in Harwich.

Key Agencies
BOS, ATM

Timing
Implement following adoption of this plan.

9.2.5 Design and construct appropriate streetscape improvements in business areas pursuant to the recommendations of section 1.2.0 of this plan. Fund these improvements with betterment assessments to the properties benefitting from such improvements.

- (I) Implementation Considerations
See implementation sections under section 1.2.14

9.2.6 Limit the expansion of public facilities in flood hazard zones.

- (I) Implementation Considerations
New infrastructure that would facilitate additional development (above what could be done without such infrastructure) in flood hazard areas should be avoided so as to minimize the potential for loss of property and life in such areas. The Board of Selectmen and Planning Board should draft for Town Meeting action a policy to indicate the appropriate purposes for infrastructure in flood hazard areas such as facilities which address problems with existing development.

Key Agencies
PB, BOS, ATM

Timing
Implement after adoption of this plan.

9.2.7 Using an adopted capital outlay planning process, prioritize and schedule for funding all of the needed projects identified in the Section VIII, Community Facilities needs summary.

(I) Implementation Considerations
This would be the normal function of the Capital Outlay Committee.

Key Agencies
COC and all departments needing capital facilities.

Timing
This work should continue to be done annually.

9.2.7.1 For inclusion by reference, this section shall include the Capital Outlay Plan most recently adopted by Town Meeting.

(I) Implementation Considerations
This section provides for the automatic inclusion of the most recently adopted capital outlay plan in this comprehensive plan without the need for a second town meeting vote (to amend this plan following the vote on the capital outlay plan).

Key Agencies
COC

Timing
No action required.

Issues Summary

It is recognized that energy consumption in the typical United States home has been much higher than it needs to be without any sacrifice of comfort level. Advances in energy conservation and production technology, combined with a significant national dependency on foreign oil and continued inflationary price increases in such fuel, it is imperative to pursue the implementation of appropriate conservation measures.

Overview of Recommendations

The plan seeks to encourage energy conservation by promoting the development of incentives for appropriate design and siting of new construction for optimal solar gain and for energy efficient construction.

Relation to other Sections

Many of the land use and transportation recommendations have the effect of potentially reducing energy consumption by motor vehicles. For example, the clustering of homes to create open space also serves to reduce energy consumption by virtue of the shorter road lengths in cluster development. Energy is saved both during construction and over the long-run (i.e. less energy used to make and install asphalt and less used by vehicles, including town snow plows, in traversing the shorter roads. Another example is the proposed growth center concept of the Land Use section. Realization of the concept would go far in minimizing automobile use over the long-term.

In the Transportation section, the proposed bike lanes, sidewalks and public transit system will allow for significant reductions in energy consumed automobile usage. Energy savings would also be realized by the Solid/Hazardous Waste Management section recommendations.

Technical Aspects

The following are explanations of some of the key terms and concepts which warrant clarification as they are presented in this section.

Energy efficient construction - Construction, renovation or redevelopment which includes any or all of the following and other energy-saving measures:

- above minimum R values for insulation of walls, attics and foundations:
- use of thermal pane windows with low emissivity coating with high R values:
- annual fuel usage efficiency ratings of at least 80% for all new heating systems: and
- use of indirect type water heaters and minimum efficiency requirements for stand alone water heaters.

Renewable energy resources - In the context of this plan, solar and wind-generated power are the primary renewable resources contemplated.

Siting - The placement of a structure on a parcel.

Solar gain - Receipt of energy benefits from solar exposure orientation.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Energy goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91). Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

10.1.0 Goals

10.1.1 To encourage energy conservation and improved energy efficiency, to encourage and stimulate investment in energy, conservation, and renewable energy resources, and to manage land uses to maximize energy efficiency.

10.1.2 To more fully utilize human energy in town and promote continued citizen involvement in town affairs in order to maintain or increase the utilization of volunteers in the provision of town services.

10.2.0 Recommendations

10.2.1 Provide incentives for siting and designing new facilities and additions for optimal solar gain, wind utilization or other innovative/alternative technologies.

(I) Implementation Considerations

Some zoning and/or property tax incentives may be feasible to encourage optimal utilization of active and passive solar access. An ad hoc committee should be appointed by the Board of Selectmen to investigate and report on the types of incentives and what kind of results they might produce in terms of reducing energy consumption. Appropriate incentives from this process should be acted upon by Town Meeting.

Key Agencies

BOS, ATM, TC, BA

Timing

Form committee after adoption of this plan.

10.2.2 Provide incentives/requirements for energy efficient construction.

(I) Implementation Considerations

The Planning Board, Board of Assessors, and Building Department should work together to develop incentives and requirements which will lead to highly energy-efficient structures. Recommendations for by-law amendments should be considered by Town Meeting.

Key Agencies

PB, BA, BD

Timing

Pursue following adoption of this plan.

Issues Summary

In order to properly assess affordable housing needs, an in-depth analysis entitled "Housing Characteristics and Housing Needs Analysis" was compiled. A summary of the findings from this study are included in the "Technical Findings Summary" for this plan. Both documents are on file for review in the office of the Planning Department.

This work showed that the greatest identified need is for affordable rental opportunities. Given the employment outlook for the Town and the Cape as a whole (i.e. job creation in the lower paying occupations by far outpacing the number of higher paying jobs), there has been and will continue to be a strong need for rental housing. Householders in low-paying occupations generally have too few resources in terms of money, time, and job security to commit to home ownership. In addition, the backbone of the local and regional economies, tourism, and retirees, requires an abundant labor supply to remain viable. It is therefore imperative to provide sufficient rental opportunities into the foreseeable future. Since deep subsidies are often required to construct new rental housing and single-family detached homes are the largest component of the Cape's housing stock, the focus needs to be on providing realistic mechanisms and financial assistance for rental of existing dwellings. The depressed prices of condominiums suggests that now would be a good time to leverage some of these units into the affordable rental (and ownership) supply.

Given the preponderance of land zoned for single-family dwellings, new affordable housing programs also need to provide financial assistance for the purchase of such units. Downpayment and loan interest assistance appear to be the most practical forms of assistance to help the greatest number of families. Housing rehabilitation for occupancy by low and moderate income households should also be a component of an affordable housing strategy.

Affordable housing opportunities for senior citizens, particularly those living alone are also needed. Attached and congregate housing units can be included to address these needs.

Finally, assistance should be available to families who are in danger of losing their housing due to temporary crises such as an injury, change in job status, or change in family composition. The Harwich Ecumenical Council for Housing has a successful emergency homelessness prevention program which has served as a model for the State. Such a program needs to be included in the Town's housing strategy.

Overview of Recommendations

The recommendations of this section seek to promote the provision of evenly distributed affordable housing, primarily by the private sector through density and other zoning bonuses, increased housing opportunities along Route 28, multi-unit housing, encouragement of affordable rental housing in accessory apartments, apartments above stores, and duplexes, encouragement of affordable housing for special needs populations, and encouragement of nonprofit sponsorship of affordable housing development.

Miscellaneous other measures are proposed to enhance and administer the growth of the Town's affordable housing stock.

Relation to Other Sections

As with most other sections, the housing component shares the greatest number of concepts with the Land Use section which promotes the appropriate regulatory framework for implementation of many of the affordable housing recommendations. Specifically, the transferable development rights (TDR) and growth center concepts provide for the higher densities which are typically necessary to stimulate private sector production of affordable units.

There is a tangent connection with the Economic Development section which promotes employment opportunities for Harwich residents which will help to lessen the need for subsidized housing.

Technical Aspects

The following are explanations of some of the key terms and concepts which warrant clarification as they are presented in this section:

Accessory apartments - A small separate dwelling unit on a parcel which also contains a larger single-family dwelling. Such apartments are by definition, significantly smaller than the single-family structure. They are commonly referred to as "in-law apartments".

Affordability controls - Legal administrative mechanisms which provide for maintenance of affordability upon subsequent re-sale or re-renting of an affordable housing unit. These typically take the form of a deed restriction or covenant.

Affordability housing - At the minimum this means housing which can be purchased or rented by a household which earns 80% or less of the median income for the area. Housing which is more expensive than as stated above but significantly less expensive than comparable market rate housing can be considered affordable and would be welcome but it would not be likely to count toward the Town's ultimate affordable housing goal, as computed by the Commonwealth of Massachusetts.

Congregate and shared housing for the elderly - Housing which features separate living units or just sleeping quarters and sanitary facilities in a building or group of buildings where common cooking, eating and/or living facilities are available to residents.

Density bonus - An allowed increase in the number of housing units and/or bedrooms per acre provided a reasonable number of affordable units are created. A density bonus can lead to affordability because it reduces the land cost per lot or housing unit so the savings can be passed on to eligible prospective occupants.

Higher density housing receiving areas (under TDR concept) - These are areas which are intended to experience a greater number of housing units per acre than allowed in other areas as they are the places in which potential dwelling units not encouraged elsewhere may be built. Please see TDR explanation under Technical Aspects of the Land Use section.

Multi-unit housing - Housing equal to or greater than three dwelling units on a parcel of land.

Single-room occupancy unit - A dwelling space containing one room with an efficiency kitchen which shares bathroom facilities with other such units.

Water resource recharge areas - The land area through which water resources such as public wells, ponds, and harbors collect their ground water.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Affordable Housing goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91), except as provided below. Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

RPP Goal 5.1 -

To promote the provision of fair, decent, safe, affordable housing for rental or purchase that meets the needs of present and future Cape Cod residents. At a minimum, each town shall seek to raise its affordable housing stock to 10% of all year-round units by the year 2000.

Reason for Inconsistency - This plan is consistent with the intent of this goal but deviates slightly from the quantities and timing contained in the RPP. Where the RPP calls for 10%, this plan recommends 7% and where the RPP suggests full attainment of the percentage goal by the year 2000, this plan advocates attainment of the percentage by the time substantial build-out has occurred in the Town. This adjustment to the goal is based on the following considerations:

1. There appears to be unanimous agreement among town officials and commission staff that 10% by the year 2000 is unachievable in a practical sense given the 1993 Harwich affordable housing stock measure of about 2.5%, the slow pace of development/housing demand of any type, and the relative nearness of the year 2000.
2. In place of this unachievable goal, it was suggested by the Commission's housing specialist to include a reasonable goal that would state our intention to ambitiously pursue the provision of affordable housing and serve as a benchmark to measure the Town's progress toward it.
3. Using the actual rate of new housing construction in Harwich over the past 30 years (159 units per year), the Planning Board found it would be reasonable to strive for 10% of all new housing units constructed each year (not just year-round units) to be affordable.
4. Given the affordable housing production capacity of all the likely sources of affordable units identified in the Board's Housing Needs Analysis and the prevailing environmental and political constraints, it was determined that a total of 340 affordable units could be created (under very positive conditions) by the time build-out is substantially attained. Due to the large number of unsubsidized units already in place, 340 total units would represent approximately 7% of the total year-round stock expected to be built in Harwich. The 7% total would be quite a feat since the Town was only at 2.5% as of 1993 which was less than the previous year due to an increase in building activity for market rate homes.

11.1.0 Goals

11.1.1 To promote the provision of fair, decent, safe, affordable housing for rental and purchase that meets the needs of present and future Harwich residents.

11.1.2 To promote equal opportunity in housing and give special consideration to meeting the housing needs of the most vulnerable segments of the Town's population.

11.1.3 To strive to provide, on average, at least 16 affordable housing units per year, 70% of which would be for rental and 30% of which would be for ownership. This rate would be 10% of the average number of new units created each year in Harwich. The long-term goal should be 340 additional affordable units at full development. These numbers are based on the Housing Need Analysis prepared for this plan and would result in an affordable housing inventory at build-out of 7% of the total estimated year-round housing stock in Harwich. Due to environmental and political constraints as discussed in the Housing Need Analysis, this goal is necessarily different from the 10% by the year 2000 goal in the Regional Policy Plan.

11.2.0 Recommendations

11.2.1 Encourage the provision of compatibly designed, evenly distributed affordable housing in each of the Town's seven villages.

(I) Implementation Considerations

Basic design guidelines for compatibility with the style, scale, and design of existing buildings in each of the seven villages will need to be developed and adopted by the Planning Board, Architectural Advisory Board, Board of Selectmen, Board of Appeals, Historical Commission, Historic District Commission, and town housing agency(ies) following a formal process to achieve this result.

The even distribution of affordable housing can be effected through adequate incentives, zoning provisions, land offerings, to make affordable housing achievable with the same relative likelihood in each of the seven villages. In addition, any town board or committee which receives requests from developers interested in creating affordable housing, should direct such developers to villages which have a lower percentage of affordable units (compared to the total stock of year-round housing) than other villages.

Inclusion in any village of affordable housing units which represent 10% or more of the year-round housing stock for that village should indicate conclusively that said village has provided its fair share of the Town's ultimate affordable housing supply.

Key Agencies

PB, AAB, BOS, ZBA, HC, HDC, HA, CACAH

Timing

Compile and adopt design guidelines and zoning measures by 1996.

11.2.2

Establish the following priority for the types of affordable housing to be provided:

- A. Rental units for nonretired householders, including units for very low income households.
- B. Rental units for retired householders, including units for very low income households.
- C. Ownership units.
- D. Congregate housing for any age group.
- E. Units for the mentally ill, homeless persons and families, and people with disabilities. These should be integrated with types A through D above.

(I) Implementation Considerations

The above priority list should be adopted by resolutions of Town Meeting, the Board of Selectmen, local housing agencies, the Planning Board, and Board of Appeals. Any feedback or outreach to potential developers of affordable housing should include this priority list.

The Zoning By-Law should be amended to make feasible and promote the achievement of the 70%/30%-affordable-unit-mix goal in 11.1.3. This may require greater zoning incentives for production of rental units than for ownership units.

Boards which issue development permits for affordable housing should refer to the priority listing in determining the merit of a particular application.

Key Agencies

ATM, BOS, PB, HA, ZBA, TC

Timing

Adopt resolutions as early as possible following adoption of this plan. Adopt zoning amendments by 1996.

11.2.3

Provide density and other zoning bonuses (such as reduced frontage and area requirements) for provision of affordable housing in higher density housing receiving areas (under TDR concept) and new residential subdivisions outside any water resource recharge areas.

(I) Implementation Considerations

Amend Zoning By-Law to include such density bonuses.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

11.2.4 Encourage inclusion of affordable housing on Route 28 parcels where commercial development is discouraged.

- (I) Implementation Considerations
As an alternative to a Route 28 property owner's participation in the proposed Transferable Development Rights program, another development option, through a special permit process, could be the construction of attached housing which would include market rate and affordable housing units, in lieu of full development of commercial rights. The Zoning By-Law would need to be amended to provide for higher density and minimum design/performance standards for such development.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning amendments by 1996.

11.2.5 Encourage multi-unit housing (including affordable units) as a transitional use along the fringes of commercial growth centers.

- (I) Implementation Considerations
Amend the Zoning By-Law to include provisions to encourage multi-unit housing where it will serve to separate commercial uses from single-family residential uses along the edges of commercial/residential growth centers.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning amendments by 1996.

11.2.6 Use an existing affordable housing agency or create a new one to:

- A. Monitor marketing and sales of affordable units.
- B. Develop and administer specific regulations for affordability controls.
- C. Develop and administer a process for awarding affordable units to eligible households.

- (I) Implementation Considerations
Following adequate public discussions with the Town's existing housing agencies, either a new housing agency should be formed to take on the tasks of A, B, and C above or said tasks should be assigned to one or more existing or proposed agencies.

Key Agencies
BOS, HA, CACAH

Timing
Commence discussions following adoption of this plan.

11.2.7 Require that any zoning bonuses/incentives to facilitate the provision of affordable housing be conditioned upon compliance with year-round affordability criteria.

- (I) Implementation Considerations
Amend Zoning By-Law to establish this as a specific performance standard for projects involving affordable housing.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning amendments by 1996.

11.2.8 Utilize town-owned parcels for nonprofit development of affordable housing and invite the participation of both nonprofit and for-profit sponsors of affordable housing.

- (I) Implementation Considerations
Nonprofit sponsors of affordable housing such as the Harwich Housing Authority, Mid-Cape Church Homes, Harwich Community Development Corporation, Habitat for Humanity, etc. as well as for-profit sponsors should be invited to compete for the use of town land for affordable housing development so as to maximize the number of suitably designed affordable units.

Key Agencies
ATM, BOS

Timing
Adopt policy following adoption of this plan.

11.2.9 Encourage the creation of affordable rental housing by:

- A. Permitting accessory apartments in detached structures where they are currently permitted now in one structure. Relax size limits of such units based on size of lots and setbacks.
- B. Permitting the construction of apartments and apartment houses in commercial/residential growth centers and along Route 28.
- C. Permitting duplexes by special permit and subject to design and affordability criteria, provided the total bedroom count does not exceed three bedrooms per acre. Disperse duplexes outside growth areas by requiring a 500 foot separation between existing and new duplexes.

- (I) Implementation Considerations
- A. Affordability controls would need to be established for application to accessory apartments in detached structures. This would be achieved through a Zoning By-Law amendment.
 - B. Zoning changes to permit construction of apartments which would include affordability controls should be adopted.

- C. The permitting of duplexes would need to include affordability controls and would be effected through amendment of the Zoning By-Law. Duplexes in growth centers would not need the proposed 500 foot separation.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

- 11.2.10 Encourage the provision of affordable units within large, existing structures along Route 28 by offering density bonus incentives.

(I) Implementation Considerations

The Zoning By-Law should be amended to include standards for the locational criteria, density bonuses, setbacks, parking, design, and long-term affordability of such units.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

- 11.2.11 Designate the Harwich Community Development Corporation as the local recipient agency for contributions of land or units for affordable home ownership and designate the Harwich Housing Authority as the local recipient agency for contributions of land or units for affordable rental housing.

(I) Implementation Considerations

Following a public hearing on the subject, the Board of Selectmen should vote to designate the roles of the respective organizations relative to the receipt/management of affordable housing contributions by Developments of Regional Impact as defined in the Cape Cod Commission Act or other local developers.

Key Agencies

BOS, HA

Timing

Complete following adoption of this plan.

- 11.2.12 Establish a local fund for affordable housing for:
- A. Receipt of cash contributions.
 - B. Use as a revolving downpayment loan fund with repayments due when home is sold plus a certain percent of appreciation or no cost if repaid within first three years.
 - C. Use as an emergency homelessness prevention fund to supplement similar assistance provided by the Harwich Ecumenical Council for Housing (HECH).
 - D. Acquisition of land and/or existing buildings by Town Meeting for creation of affordable housing.

(I) Implementation Considerations

The Board of Selectmen should designate an existing or new housing agency to manage an affordable housing fund to be authorized by Town Meeting either with or without an initial appropriation. In carrying out the purposes of recommendation 11.2.12, the designated agency could engage in fund-raising activities and adopt the same emergency assistance program operated by HECH.

Key Agencies

BOS, HA, CACAH, TC, TT

Timing

Implement following adoption of this plan.

- 11.2.13 Establish criteria for lot, unit or development site contributions for affordable housing contributions. Such criteria should include considerations about buildability of a parcel(s), suitability of area for residential use, proximity to goods and services, habitability of existing units per the State building code, timing of conveyance, compatibility of design and appearance with market rate units, order of preference for types of contributions, etc.

(I) Implementation Considerations

The designated managing agencies should adopt a policy and/or regulation pertaining to appropriate local criteria for affordable housing contributions from local development projects.

Key Agencies

BOS, HA

Timing

Implement following completion of 11.2.11.

- 11.2.14 Incorporate reasonable numbers of affordable units for households with special needs such as elderly rentals in apartments, congregate and shared housing for the elderly, housing for the physically and mentally disabled, and single-room occupancy units through density bonuses and other zoning incentives in areas where higher density is permitted.

(I) Implementation Considerations

In amending the Zoning By-Law, include in the special permit provisions for density bonuses the authority to specify the inclusion of affordable units for households with special needs. This should include appropriate bonuses/incentives to permit financial feasibility of such construction.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning amendments by 1996.

11.2.15 Encourage and assist acquisition and renovation of existing units for re-use as affordable units through reverse annuities and/or tax incentives.

- (I) Implementation Considerations
The Board of Selectmen, Board of Assessors, and Planning Board should develop for Town Meeting consideration a program by which real estate tax incentives would be offered to owners of existing housing units who renovate and make available for affordable rental rates, existing housing units. These same agencies should, as a group, seek to develop a program for encouraging the private sector use of reverse annuities to acquire housing units over time for inclusion in the stock of long-term affordable housing.

Key Agencies
ATM, BOS, BOA, PB, TC

Timing
Implement following adoption of this plan.

11.2.16 Seek open space in affordable housing developments through lot and unit clustering.

- (I) Implementation Considerations
Amend Zoning By-Law to encourage/require the provision of open space in affordable housing developments.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning amendments by 1996.

11.2.17 Continue participation in the Barnstable County Home Consortium which provides funding for housing rehabilitation and other assistance to increase the supply of decent, affordable housing.

- (I) Implementation Considerations
The appropriate votes need to be made by Town Meeting.

Key Agencies
ATM, BOS

Timing
Include article on Annual Town Meeting warrant as needed.

11.2.18 Update the Housing Needs Analysis every three years.

- (I) Implementation Considerations
The Planning Board should work with the public and private housing and social service agencies to update the affordable housing needs of the Town's current and future residents.

Key Agencies
PB, HA, CACAII

Timing
Complete update every three years, starting with date of original analysis.

Issues Summary

The remaining, unprotected open space in Harwich was found to be vulnerable to loss through continued development of land, primarily for housing. Since all land in town is zoned for some type of development, it is likely that undeveloped land identified in this planning program will not stay that way and since much of the character of the Town is determined by its open space, preservation of such character requires retention and protection of significant portions of undeveloped land.

Although the Town has great recreational assets such as Brooks Park and Whitehouse Field in Harwich Center, the other six villages of the Town are somewhat underserved by open play areas. In addition, most public bathing beaches will pass comfortable capacity levels with the projected increase in the Town's population due to the limited supply of beach areas (relative to demand). Adequate access to and protection of recreational facilities and programs by both disabled and nondisabled residents and visitors is also lacking.

Given the Town's location in a resort region, the identified lack of sufficient recreation opportunities and facilities for the projected doubling of the year-round and seasonal populations, especially a recreation center, needs to be addressed.

The above findings and others are expressed in greater detail in the data-gathering stage documents entitled "Existing Land Use" (Section VI), "Community Facilities" (Section VIII), and "Historic Resources/Community Character" (Section X). These sections as well as a summary of their findings are on file for review in the office of the Planning Department.

Overview of Recommendations

The open space recommendations in this section seek to preserve a significant amount of permanent open space at minimal cost to the Town. Utilizing the proposed transferable development rights tool. (see Land Use section) in concert with proposed improvements to cluster development and strategic land acquisitions, several hundred acres town-wide can be preserved. The plan seeks to create greenbelt areas containing contiguous open space and including recreational trails. Open space management improvements as well as setting of priorities for land acquisition are also proposed.

Recommendations pertaining to recreation include enhancement, protection, and linkage of existing trail corridors, more active recreation facilities, including a community recreation center, extension of the bike trail, and improved access to recreational facilities for disabled residents.

Relation to Other Sections

As proposed in this plan, the creation of permanent open space has a strong foundation in the Land Use section which recommends regulatory tools that can provide for incremental additions to the amount of preserved open space.

Protection of water resource recharge areas tends to result in long-term preservation of open space. Hence, there is a significant connection to the Water Resources section.

Since the Community Facilities section promotes the adequacy of Town facilities which include recreation and conservation land, it should be consulted in concert with this one to understand the full scope of the open space and recreation recommendations.

Finally, the character-preserving benefits of open space preservation support the recommendations under Historic Resources/Community Character.

Technical Aspects

The following are explanations of key terms and concepts which warrant clarification as they appear in this section:

Clustering as-of-right - Cluster development which does not require a special permit or variance to proceed.

Cluster development - Development of land which involves the subdivision of a parcel or parcels whereby the minimum required lot area and frontage may be reduced, provided the same number of lots are created as would be using full size lots and frontage and further provided the residual land left over from use of the smaller lot areas is dedicated to permanent open space. State law requires the granting of a special permit for this style of development.

Density bonus - The granting of a higher intensity use, usually one or more extra dwelling units or building lots, to a developer in exchange for a public benefit.

DRI - Development of regional impact as provided under the Cape Cod Commission Act. A copy of this Act is available for review in the office of the Planning Department.

Greenbelt areas - Large, mostly contiguous areas of currently vacant land.

Mandatory clustering - Cluster development which is required by a zoning by-law which offers the choice to either cluster or build conventionally at a very slow rate such as one dwelling unit every 2 years.

Nature learning center - A structure with accessory parking facilities which provides for classroom instruction and exhibit space for the purpose of teaching visitors about the natural features of the area.

Open space - Land without structures or extensive paved or finished surfaces, typically occurring as woodland, open fields, bogs, waterbodies, farmland, play areas, and parks. Open space may also include yard areas, buffer areas, and cemeteries and may be permanent or temporary. As used in this plan, open space is intended to be permanent.

TDR's - (Transferable Development Rights) - The existing rights under zoning to build residential or commercial structures which, instead of being built on the land where the rights currently exist, can be transferred to other parcels in the same areas or in completely different areas of town. (See Land Use section.)

Water resource recharge areas - The land area through which water resources such as public wells, ponds, and harbors collect their ground water.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Open Space and Recreation goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91), except as provided below. Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

RPP Minimum Performance Standard 6.1.2 -

The submission of a cluster development preliminary plan for residential subdivisions of five or more acres shall be required for consideration during the development review process.

Reason for Inconsistency - The Harwich Planning Board has chosen to keep its options open regarding the inclusion in its rules and regulations a requirement that cluster development sketch plans be submitted for any subdivision of five or more units. Section 12.2.4 of this plan proposes a significant revamping of the Town's cluster regulations. Only after such process can the suitability of the RPP requirement be determined.

It has been suggested that the RPP requirement be included in this plan with a provision that the cluster sketch plan submission may be waived when the Planning Board determines that such a plan would not be appropriate for a particular site. This would add needlessly to an applicant's processing time and expense by requiring an extra planning board hearing for a vote to waive this regulation. Such result would be directly opposite of the intent of section 6.2.3.n of this plan and RPP Commission Action B under Section 3, Economic Development which both recommend streamlining the permitting process to minimize delays.

Finally, other measures in this plan adequately demonstrate the commitment to preserving open space through cluster development.

12.1.0

Goals

12.1.1

To preserve and enhance the availability of open space in Harwich in order to provide wildlife habitat, recreation opportunities, and protect the natural resources, scenery, and character of the Town.

12.1.2

To preserve and enhance opportunities for passive and active recreation in the natural environment to meet the needs of both residents and visitors.

12.2.0

Recommendations

12.2.1

Preserve large tracts of undeveloped land through implementation of growth center/TDR concepts.

(I)

Implementation Considerations

See section 1.2.0

12.2.2 Provide for the linkage of existing and future open space areas for wildlife and trail corridors.

- (I) Implementation Considerations
Incentives and requirements should be included in the Zoning By-Law which seek to connect newly created open space, either by lot clustering or transfer of development rights, with existing and future open space and town-owned land. Such amendments should enable the Planning Board to shape the design of development which provides open space. The Board would be guided by the open space network map which is a part of this plan.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning changes by 1996.

12.2.3 Seek legislation to permit clustering as-of-right so as to encourage and facilitate open space preservation.

- (I) Implementation Considerations
The Planning Board and Board of Selectmen should utilize appropriate legislative channels to advocate the adoption of legislation which will enable cluster subdivisions to be created as-of-right, instead of by special permit as the current state statute requires. If successful, the Harwich Zoning By-Law would need to be amended to establish specific performance standards for cluster subdivisions that would not require a special permit.

Key Agencies
ATM, PB, BOS, TC

Timing
Adopt zoning changes following the creation of the appropriate enabling legislation at the state level.

12.2.4 Establish more appropriate criteria/incentives for the design of open space preserved through zoning. Special objectives include:

- A. Keeping development from encroaching on environmentally sensitive areas.
- B. Allowing for agricultural cultivation of preserved open space.
- C. Creation of large, contiguous parcels of preserved open space.
- D. Encouraging public access through open space areas.

- (I) Implementation Considerations
This would involve the overhaul of the existing cluster subdivision regulations under zoning, regardless of the outcome of 12.2.3.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning amendments by 1996.

12.2.5 Increase the amount of open space derived from cluster development by increasing conventional style lot areas (when clustering is not chosen), setting a maximum lot size for clustered lots, and/or offering a density bonus for smaller lots in areas outside water resource/recharge areas.

- (I) Implementation Considerations
This would be part of the cluster regulations overhaul under 12.2.4. The suggested increase of the minimum lot area, if adopted, should apply only to tracts of land greater than five acres.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning changes by 1996.

12.2.6 Use TDR's, mandatory clustering, and/or zoning incentives to guide development to occur outside of greenbelt areas to the greatest extent possible and to avoid severing connected open space areas with development.

- (I) Implementation Considerations
All three approaches would require amendments to the Zoning By-Law.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning changes by 1996.

12.2.7 Amend subdivision process to invite or require submission of a cluster concept sketch plan, pursuant to the outcome of the cluster regulations revisions under 12.2.4.

- (I) Implementation Considerations
The Planning Board should amend its Rules and Regulations Governing Subdivisions to include this suggestion, if warranted.

Key Agencies

PB, TC

Timing

Adopt regulatory changes by 1996.

12.2.8 Designate the Planning Board and Conservation Commission as the open space management agencies relative to action on Developments of Regional Impact and growth center open space issues, including adoption and implementation of standards for on-site and off-site open space.

- (I) Implementation Considerations
This should be the subject of an article to be considered by Town Meeting. Regardless of the outcome of this process, the Planning Board and Conservation Commission should jointly prepare zoning standards for on-site and off-site open space.

Key Agencies
ATM, PB, ConC, TC

Timing
Adopt zoning changes by 1996.

12.2.9 Encourage the maintenance of existing open space in development and redevelopment in growth centers, where practical, by amending the Zoning By-Law to require the maximum practical retention of natural vegetation on a development site.

(I) Implementation Considerations
Zoning incentives and standards would need to be developed to minimize encroachment of new building construction and parking facilities on existing vegetated/open space beyond any reasonable disturbances necessary for construction.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning changes by 1996.

12.2.10 Prioritize open space purchases and contributions as follows:

1. Wellfield protection for South Harwich wells.
2. Pond recharge areas.
3. Harbor recharge areas.
4. Wellfield protection in other existing and future well areas.
5. Wetland areas.
6. Linkage of existing open space parcels.
7. Enhancement of greenbelt areas.
8. Parcels adjacent to other preserved open space.
9. Steep slope areas.

(I) Implementation Considerations
This priority ranking should be adopted by resolutions of Town Meeting, the Board of Selectmen, and Planning Board and, if practical, included in the Zoning By-Law to facilitate its application to development proposals.

Key Agencies
ATM, BOS, PB, TC

Timing
Adopt resolutions and zoning changes by 1996.

12.2.11 Adopt provisions to maximize compatibility of new development with adjacent protected open space.

(I) Implementation Considerations
One way of achieving this would be to amend the Zoning By-Law to incorporate undisturbed buffer areas on lots created adjacent to existing protected land but which would lack any open space of their own.

Key Agencies

ATM, PB, TC

Timing

Adopt zoning changes by 1996.

- 12.2.12 Acquire trail easements 10-20 feet in width to provide a permanent network of wooded trails throughout the Town. Creation of a looped trail or trails should be a main objective.

(I) Implementation Considerations

The Planning Board, Conservation Commission, Recreation and Youth Commission, Engineering Department and Town Counsel, should develop a detailed action plan which prioritizes the acquisition of specific segments of the proposed trail network generally shown on the Recreational Trails Map which is a part of this plan (see Figure 12.1). Acquisition articles should be presented for Town Meeting action.

Key Agencies

ATM, PB, ConC, RYC, TE, TC

Timing

Commence following adoption of this plan. Present acquisition articles for segments of the network over time and based on the relative priority of each segment.

- 12.2.13 Develop trail systems for public use throughout all major town-owned parcels and facilities.

(I) Implementation Considerations

The same key agencies as in 12.2.12 should include interior and connecting trails on Town-owned parcels (where pedestrian and bicycle traffic would not be detrimental) in the detailed trail action plan. Any agency not identified as a key agency whose land would be involved should be included in the planning process.

Key Agencies

ATM, PB, ConC, RYC, TE, TC

Timing

Commence following adoption of this plan.

- 12.2.14 Encourage the establishment of open space for active recreation in under-served areas of town by permitting it as a trade-off for higher density or other zoning relief.

(I) Implementation Considerations

Currently, the Planning Board can require a subdivider to create a lot in a proposed subdivision for park purposes, provided the Town pays the developer fair market value for the land within three years of plan approval. This recommendation would improve this process by enabling the Planning Board to offer one or more zoning/subdivision incentives for a park lot without the need for a Town appropriation. Such incentives might include frontage reductions, an additional

building lot (through lot area reduction), road construction waivers, etc.. The Board should coordinate with the recreation and Youth Commission to determine where additional park facilities would be needed.

Key Agencies
ATM, PB, TC

Timing
Identify target areas following adoption of this plan. Adopt regulatory changes by 1996.

- 12.2.15 Encourage establishment of nature camps with a lodge or clustered cottages for use and appreciation of natural areas. Such activities should be encouraged on parcels nearby or adjacent to existing and future recreation areas/facilities such as the Reservoir, Hawksnest Park, and trail corridors.

- (I) Implementation Considerations
An ad hoc committee should be appointed by the Board of Selectmen to conduct a careful examination of the feasibility of such facilities in each of the potential locations. Wherever such facilities may be feasible, they should be permitted through appropriate amendments to the Zoning By-Law.

Key Agencies
ATM, BOS, PB, TC

Timing
Commence following adoption of this plan. Adopt regulatory changes by 1996.

- 12.2.16 Establish a nature learning center in the Bell's Neck/Reservoir area.

- (I) Implementation Considerations
The Board of Selectmen should sponsor an article for Town Meeting which proposes the creation of a nature center study committee to examine the merits and mechanics of such a facility in the Bell's Neck area. Further implementation would be subject to the report of the committee.

Key Agencies
ATM, BOS

Timing
Commence following adoption of this plan.

- 12.2.17 Pursue the extension of the Cape Cod Rail Trail Bikeway through to Chatham from Harwich Center and beyond the rail bed out of Chatham through East Harwich and into Brewster.

- (I) Implementation Considerations
The Bike Path Study Committee should continue its pursuit of extension of the path and should study potential alternate routes from Chatham to Brewster.

Key Agencies

BPSC

Timing

Ongoing

12.2.18 Construct facilities to provide for reasonable access by disabled persons to recreation facilities and natural areas including:

- A. Beach access ramps and boardwalks.
- B. Brail signage in appropriate locations.
- C. TDD equipment where audio programs are offered.
- D. Wheelchair accessible trail facilities.
- E. Accessible comfort stations.

(I) Implementation Considerations

The Disability Rights Committee and the Recreation and Youth Commission should work with the Town Engineering Department to prepare a detailed action plan for providing the suggested access improvements. The plan should be implemented through budget and article appropriations.

Key Agencies

ATM, DRC, RYC, TE

Timing

Commence following adoption of this plan.

12.2.19 Acquire the following parcels for public recreational use:

- A. Land generally behind movie theater on Route 137 for future golf course and/or trails.
- B. Waterfront (fresh and salt) property which would be suitable and practical for use as one or more public beaches.
- C. Land adjacent to Monomoy River for trails, nature study, picnic areas, and sanitary facilities as well as a possible bike trail link out of Chatham.

(I) Implementation Considerations

The Land Acquisition Committee and/or Board of Selectmen should sponsor individual articles to acquire the subject land over time. Such acquisitions will relieve the pressure for use of existing recreational facilities which will be created by the projected doubling of the Town's population. Extra TDR incentives in the target areas may help reduce the cost of the land.

Key Agencies

ATM, BOS, IAC

Timing

Following adoption of this plan and coordination with the Capital Outlay Plan, one article each year over the succeeding three years should be submitted for consideration by Town Meeting.

12.2.20 Encourage the State to install adequate access, parking, and sanitary facilities at Hawksnest Pond.

- (I) Implementation Considerations
The Board of Selectmen should work with the Town's legislative representatives to advocate this position to the Mass. Department of Environmental Management.

Key Agencies
BOS

Timing
Commence following adoption of this plan.

12.2.21 Design and construct a community recreation center to include facilities for swimming and other recreational activities and instruction as well as performance and administrative facilities.

- (I) Implementation Considerations
The work of the Community Center Study Committee already appointed for this purpose should be continued so as to complete the first step for this project. The Committee's findings will determine subsequent steps.

Key Agencies
CCSC

Timing
Work ongoing.

12.2.22 Provide for natural buffers around public lands.

- (I) Implementation Considerations
Amend the Zoning By-Law to require undisturbed buffer areas adjacent to public and quasi-public property.

Key Agencies
ATM, PB, TC

Timing
Adopt zoning changes by 1996.

12.2.23 Provide for at least one public recreational/facility (park, playground, building, and/or other recreational place) within each of the residential growth centers.

- (I) Implementation Considerations
Donation and/or acquisition of vacant and/or developed land should be pursued according to a consensus on the type of recreational facility desired in each growth center. Such lands should be as near as possible to the center of each village's population concentration so as to optimize their accessibility without the need for extensive parking facilities.

Key Agencies

ATM, BOS, LAC, PB, RYC, CCSC, TC

Timing

Commence following adoption of this plan.

Issues Summary

Due to the historic resources inventory work completed by volunteers and then by a paid consultant, there is abundant documentation of the extent and importance of historic resources in Harwich. For specific findings on this work, the Section X - Historic Resources/Community Character document prepared for this plan, available for review in the office of the Planning Department, should be consulted.

Overall, concentrations of historically significant structures and sites exist in the village centers of South Harwich, Harwich Center, Harwich Port, West Harwich, and North Harwich. Smaller groupings of older structures exist in East Harwich and Pleasant Lake. As new development and redevelopment are accommodated, careful attention to the preservation of the historic qualities of these areas and individual structures is needed.

The Section X report also documents the extensive and appealing elements which help visually define the character of Harwich as a whole and the unique features of each of the seven villages. In general, the report identifies the most essential elements of community character and emphasizes the need to preserve them.

Overview of Recommendations

In addition to recommending the consideration of specific areas as effective but less stringently regulated, historic resource districts, the plan seeks to protect historic resources and character by promoting design guidelines for rehabilitation or additions to historically significant structures and design review procedures for otherwise unregulated historic structure work.

Community character preservation would be achieved through the plan's recommended design compatibility point system to encourage designs of new construction which would complement existing character-determining features and by a broad recommendation to preserve identified scenic components among the villages.

Relation to Other Sections

The shifting of development pressure to areas rich in historic resources and character as proposed by the growth center concept in the Land Use section creates the need for adequate check and balance controls. This section seeks to assure that new development of any magnitude respects the character of each of the village centers.

There are less significant connections between this section and the Community Facilities and Water Resources sections.

Technical Aspects

The following are explanations of the key terms and concepts which warrant clarification as they are presented in this section:

Built environment - An environment which represents structures and other fixed features such as parking lots and fences, which are not naturally occurring.

Character-determining features - Visible features or patterns either natural or built which help define and connect a structure to its setting. Features which are common to a group of buildings or yard areas usually play a role in determining character. Generally, the greater the number of common features, the more clearly definable the character will be.

Design compatibility - Relative consistency of design of new development with that of existing development in the area.

Design guidelines - A document to be produced by the Town which will include suggestions as to what features of design would be considered complementary to existing designs.

Historic resource districts - An area with definite boundaries which contain a significant collection of structures, sites, and settings which represent important aspects of the history of the area in need of greater aesthetic protection than zoning would permit.

Historically significant structures - Historic structures (pre-1945) which either individually or as grouped exhibit architectural style/design features which constitute clear examples of key design aspects prevalent during their construction.

Local historic structure inventory - A list maintained by the Harwich Historical Commission which identifies all structures believed to be built before a specified date.

Regional Policy Plan (RPP) - A planning document produced and updated by the Cape Cod Commission which sets forth the planning goals and policies for all of Barnstable County. A copy of the RPP may be reviewed in the office of the Harwich Planning Department or obtained from the Cape Cod Commission, Main Street, Barnstable Village.

Visual character of Harwich - The composite image of the Town as it is determined by the entirety of its built and natural components.

Consistency with Regional Policy Plan

This plan incorporates by this reference consistency with all of the Historic Preservation/Community Character goals, policies, and town actions of the Cape Cod Commission's Regional Policy Plan (RPP - effective 9/6/91), except as provided below. Implicit in this statement is the intention to complete timely adoption of local policies and regulations to implement all applicable provisions of the RPP.

13.1.0 Goals

- 13.1.1 To protect and preserve the historic and cultural features of the Town's landscape and built environment that are important components of the Town's character, heritage, and economy.
- 13.1.2 To ensure that future development and redevelopment respects the traditions and character of village centers and outlying rural areas so as to protect the visual and historic character of Harwich.
- 13.1.3 To promote the appreciation and preservation of historic and scenic resources through ongoing education.
- 13.1.4 To coordinate the various historic preservation and community character activities and interests in order to mutually address current and future issues, opportunities, and responsibilities.

13.2.0 Recommendations

13.2.1 Historic Preservation

13.2.1.1 Develop design guidelines for rehabilitation of or additions to historically significant structures.

(I) Implementation Considerations

The Historical Commission and Historic District Commission as well as the Architectural Advisory Board, should work with the Planning Board to develop appropriate design guidelines for historic structures both within and outside of designated historic districts. Such guidelines should be referenced in all the relevant permit literature to encourage their application when renovations or additions are made to historic structures. The guidelines should be incorporated into any regulations for designated historic districts.

Key Agencies

HHC, HDC, AAB, PB, TC

Timing

Commence following adoption of this plan.

13.2.1.2 Designate the following areas as historic resource preservation districts pursuant to the recommendations of the historic resources inventory conducted by the Harwich Historical Commission:

- A. Harwich Center (expanded)
 - to the west along Main Street to 627/629 Main Street and to the east to 769 Main Street.
 - to the north along Oak Street to include #16 and #22.
 - to the north along Pleasant Lake Avenue to include #9 and #11.
- B. West Harwich - along Route 28, west of Herring River, between #26 and #126.
- C. East Harwich - along Church Street, between #194 and #247.
- D. Pleasant Lake - along Pleasant Lake Ave., between #377 and #532.
- E. Other areas as determined by the currently accepted state and federal criteria for the designation of historic resource areas or districts, or as determined by Town approval of local agency recommendations.

(I) Implementation Considerations

The Board of Selectmen should designate an appropriate agency as a study committee to investigate the designation of the recommended areas as historic resource districts. The work of the study committee should be guided by the applicable statute on the creation of historic districts. The involvement of all active historic preservation agencies and groups in these proceedings should be fostered.

Key Agencies

ATM, HHC, HDC, TC

Timing

Commence following adoption of this plan.

13.2.1.3 Adopt customized historic district regulations which include the clear designation of locally appropriate historical, cultural and architectural features to be subject to scrutiny.

(I) Implementation Considerations

As historic resource districts are created, the appropriate regulatory tools will need to be adopted by the governing historic district commission following the necessary town meeting action. In crafting the regulations, care should be given to avoiding excessive requirements for historic district commission scrutiny through the development and use of locally determined criteria.

Key Agencies

ATM, HHC, HDC, TC

Timing

Commence during consideration of historic district designations. Seek to adopt regulations concurrent with designation of each district.

13.2.1.4 The following areas should be surveyed for possible listing of structures in the National Register of Historic Places and/or listing as a property within an historic district:

- A. Parallel Street - between Forest Street and South Street.
- B. South Street - north of Sisson Road.
- C. Forest Street (all).
- D. Route 39 - north of Church Street.
- E. Pleasant Bay Road (all).
- F. Route 28 - secluded properties along Pleasant Bay.
- G. Neel, Julien, Deep Hole, and Uncle Venie's Roads (all).
- H. Harwich Port - areas north and south of Route 28, including the Campground area and the residential development to the west of Ayer Lane.
- I. Bank Street (all).
- J. Gorham Road (all).
- K. West Harwich - areas north and south of Route 28.
- L. Old Mill Point area.
- M. Chase Road (all).
- N. Shore Road - residential properties.
- O. Pleasant Lake - early twentieth century cottages along pond shores of Long, Hinckley's, and Seymour's Ponds.
- P. Queen Anne Road - area of intersection with the Cape Cod Rail Trail.
- Q. North Harwich - Depot Road and Main Street areas.
- R. Where not otherwise covered: Kelley Street, Great Western Road, Sisson Road, Lower County Road, Doane Road, and Queen Anne Road.

(I) Implementation Considerations

The Harwich Historical Commission should continue to recruit volunteer and/or paid staff to complete the inventory work identified above by the consultant who compiled the 1992-1993 historic resources inventory for Harwich. Any new areas which appear to warrant historic district status should be included in the areas listed under 13.2.1.2.

Key Agencies

HHC

Timing

Work ongoing

13.2.1.5 Establish a development review process and agency for specific types of work to be done on any structure in the local historic structure inventory.

(I) Implementation Considerations

For review of development projects concerning identified historic district structures which are not included in an historic district, an advisory review agency would need to be established to help promote the retention of historically significant aspects of a structure. Such an agency would function in a manner similar to the Architectural Advisory Board. The action of Town Meeting would establish such an agency.

Key Agencies

ATM, HHC, TC

Timing

Commence following adoption of this plan and adopt regulatory language by 1996.

13.2.1.6 Develop guidelines for sensitive design of development on or adjacent to prehistoric or historic archaeological sites. Include a process for review of proposals subject to the guidelines.

(I) Implementation Considerations

The Harwich Historical Commission should prepare and recommend for Town Meeting consideration the appropriate design guidelines and process.

Key Agencies

ATM, HHC, TC

Timing

Adopt guidelines by 1996.

13.2.1.7 Provide incentives for unregulated parcels to achieve design compatibility with historic preservation goals.

(I) Implementation Considerations

The Zoning By-Law should be amended to incorporate zoning bonuses for the achievement of design consistency of new development with existing features within and surrounding the development site. Bonuses and TDR incentives should also be offered to encourage the re-use and rehabilitation of historic structures.

Key Agencies

ATM, PB, HHC, AAB, TC

Timing

Adopt zoning changes by 1996.

13.2.1.8 Establish permanent historic interpretive facilities in areas frequented by large numbers of tourists, such as Wychmere Harbor, The Herring River corridor, and the Cape Cod Rail Trail (at Main Street or Pleasant Lake Avenue), and promote understanding and appreciation of the rich history of the Town.

- (I) Implementation Considerations
The Historical Commission should recommend the locations and designs for interpretive facilities to the Board of Selectmen for inclusion in a Town Meeting Warrant for construction funding. The Commission should also work with other town, county, and state agencies to develop promotion programs for appreciation of the Town's historic resources and history.

Key Agencies
ATM, HHC, BOS

Timing
Commence following adoption of this plan.

13.2.1.9 Provide realistic options for the preservation and re-use of historic structures and maintain the demolition delay by-law to help prevent unnecessary demolition of such structures.

- (I) Implementation Considerations
This suggests doing everything practicable to prevent the loss of historic structures through implementation of other provisions of this plan.

Key Agencies
ATM, PB, HHC, AAB, HDC, TC

Timing
Commence following adoption of this plan. Adopt zoning changes by 1996.

13.2.1.10 Adopt specific building bulk and setback criteria to prevent inappropriate encroachment of new commercial or residential development on historic resources.

- (I) Implementation Considerations
Amend Zoning By-Law as appropriate.

Key Agencies
ATM, PB, HHC, TC

Timing
Adopt zoning amendments by 1996.

13.2.1.11 The Harwich Historical Commission should be designated as the central coordinating agency for historic preservation activity recommended by this plan.

Implementation Considerations

Following designation as the coordinating agency by the Board of Selectmen, the Historical Commission should develop a means to coordinate its preservation work with that of the historic preservation agencies/groups, the Planning Board and regional, state, and federal preservation agencies.

Key Agencies

BOS, M HHC, HDC, PB, CCC, MHC

Timing

Commence following adoption of this plan.

13.2.2 Community Character

13.2.2.1 Develop and implement incentives for compatibility of new development with existing character-determining features.

(I) Implementation Considerations

Such incentives should be structured in a point system in which achievement of a certain number of design compatibility points entitles a project to exceed certain minimum requirements such as setbacks, site coverage, parking spaces, landscaping, building height, etc. The point system should be based on and incorporate the concepts expressed in design guidelines recommended elsewhere in this document. The point system should be incorporated into the Zoning By-Law with specific language on the process and designation of the administering agency.

Key Agencies

ATM, PB

Timing

Adopt zoning changes by 1996.

13.2.2.2 Preserve the scenic components of each village as identified in Section X, Historic Resources/Community Character.

(I) Implementation Considerations

The Board of Selectmen should appoint/designate a board, commission, or committee as the agency responsible for recommending to the Board a series of measures to protect and/or enhance the relevant aspects of each scenic resource identified and any others worthy of inclusion. The Board of Selectmen should then sponsor articles to implement the recommendations or direct other agencies to follow through as needed. For example, the agency could recommend that the Planning Board sponsor a zoning amendment that would require long, narrow lots in developments that would impact on adjacent bogs or other scenic resources.

Key Agencies

BOS

Timing

Commence following adoption of this plan.

13.2.2.3 Designate the following roads as Local Scenic Roadways and establish guidelines and other measures to protect their scenic aspects:

Bank Street	Forest Street
Bay Road	Lothrop Avenue
Bell's Neck Road	North Road
Chase Street	Riverside Drive
Chatham Road	South Chatham Road
Church Street	South Street
Deep Hole Road	Uncle Venie's Road
Depot Street	

(I) Implementation Considerations

This would involve the Planning Board, Conservation Commission, or Historical Commission recommending that Town Meeting designate these roads as scenic. According to Massachusetts General Laws, Ch.40. Sec. 15C, "after a road has been designated as a scenic road, any repair, maintenance, reconstruction, or paving work done with respect thereto shall not involve or include the cutting or removal of trees, or the tearing down or destruction of stone walls, or portions thereof, except with the prior written consent of the Planning Board...after a public hearing." Such designation would not affect the eligibility of the Town to receive Chapter 90 aid for such roads. To provide guidance on how to address and properly handle proposed activities along scenic roads, guidelines and/or regulations need to be developed for use by the Planning Board as it conducts the required public hearings.

Key Agencies

ATM, PB, TC

Timing

Commence following adoption of this plan. Adopt regulatory measures by 1996.

F I G U R E S

- 1.1 TDR MAP
- 1.2 EAST HARWICH GROWTH CENTER MAP
- 1.3 HARWICH PORT GROWTH CENTER
- 1.4 WEST HARWICH GROWTH
- 1.5 NORTH HARWICH INDUSTRIAL GROWTH CENTER
(Great Western Road area)
- 1.6 NORTH HARWICH INDUSTRIAL GROWTH CENTER
(Queen Anne Road area)
- 1.7 PLEASANT LAKE GROWTH CENTER
- 1.8 FUTURE LAND USE MAP
- 1.9 HARWICH CENTER GROWTH CENTER
- 1.10 GREENBELT MAP
- 12.1 PROPOSED TRAILS MAP

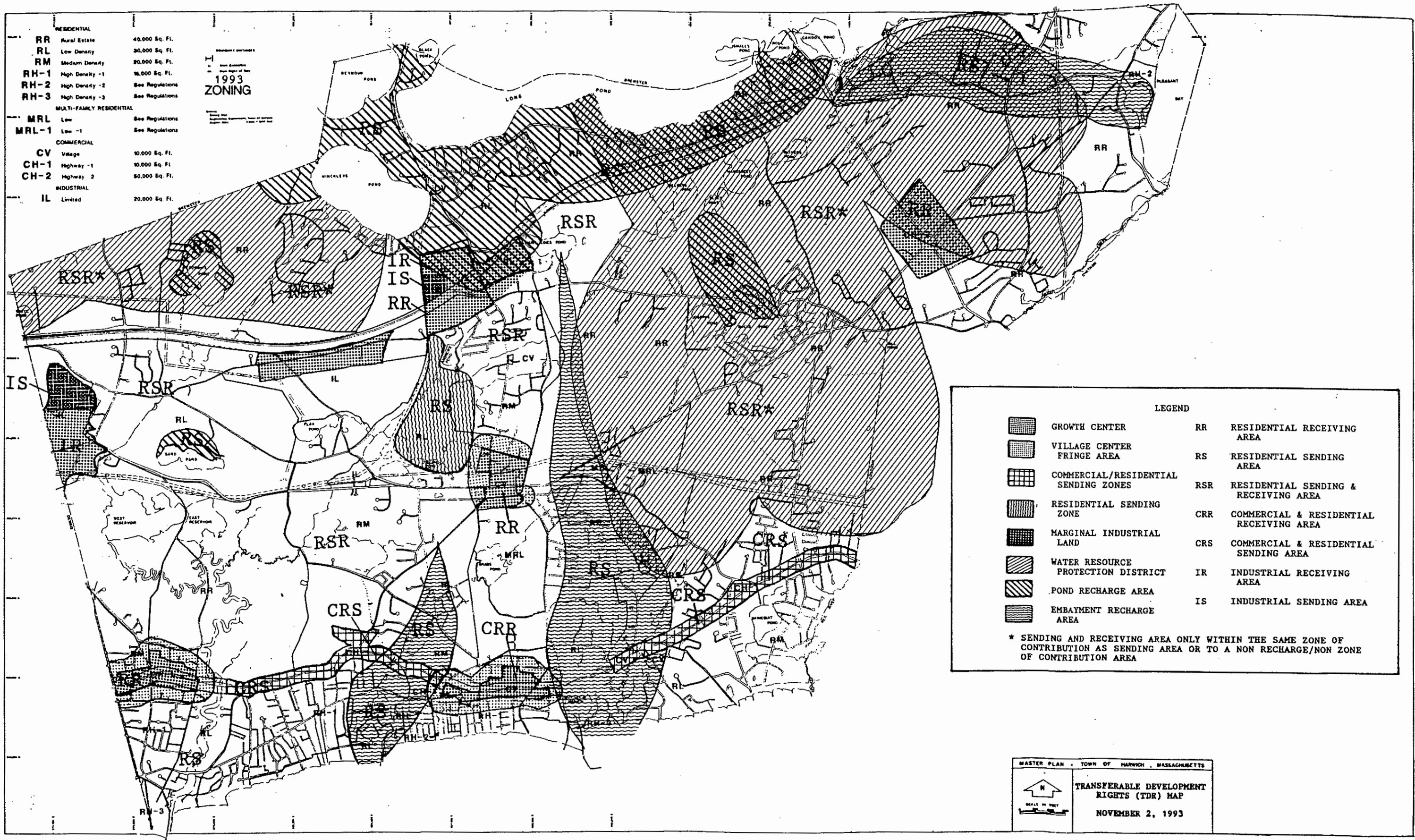
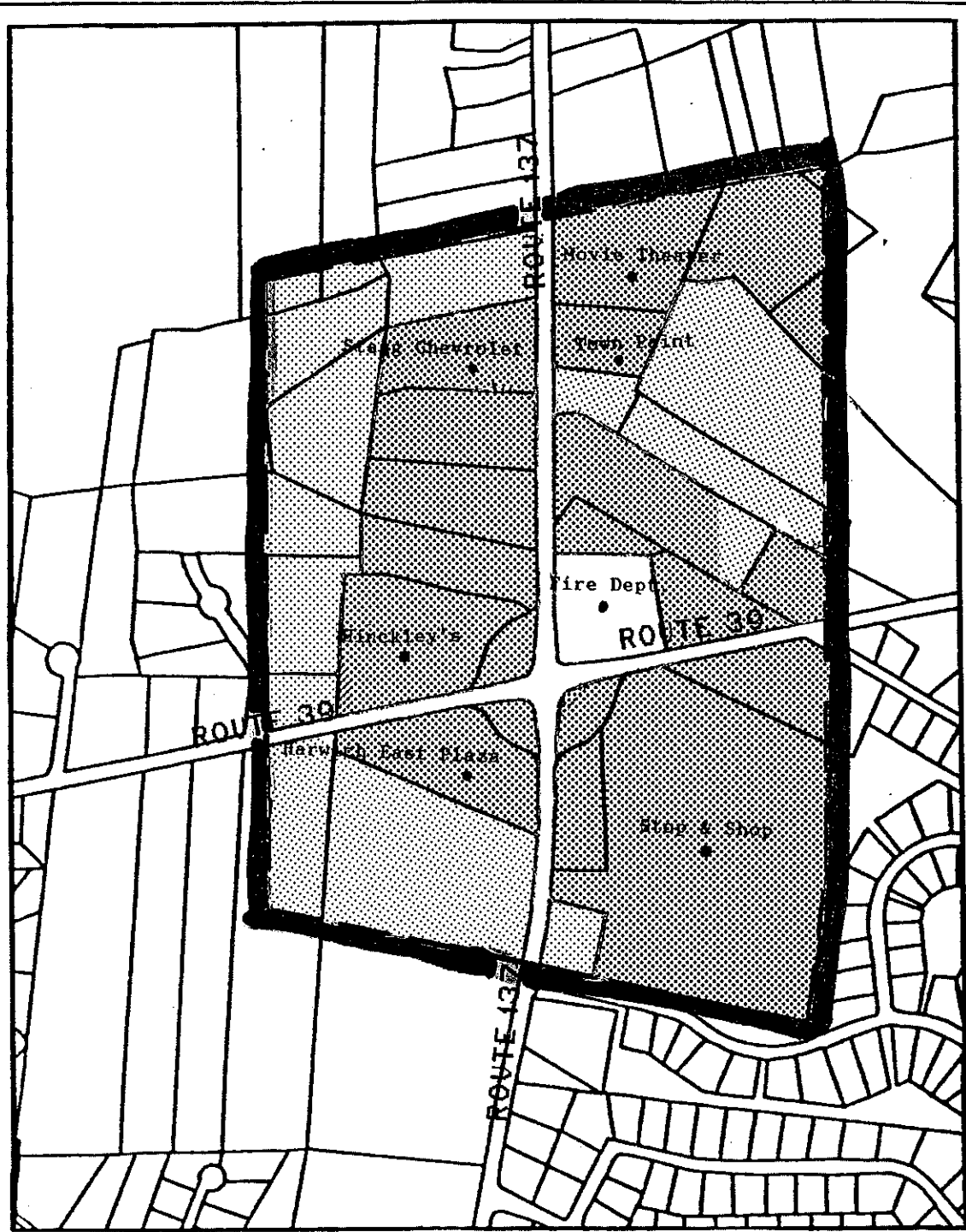


FIGURE 1.1



PROPOSED EAST HARWICH GROWTH CENTER

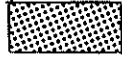

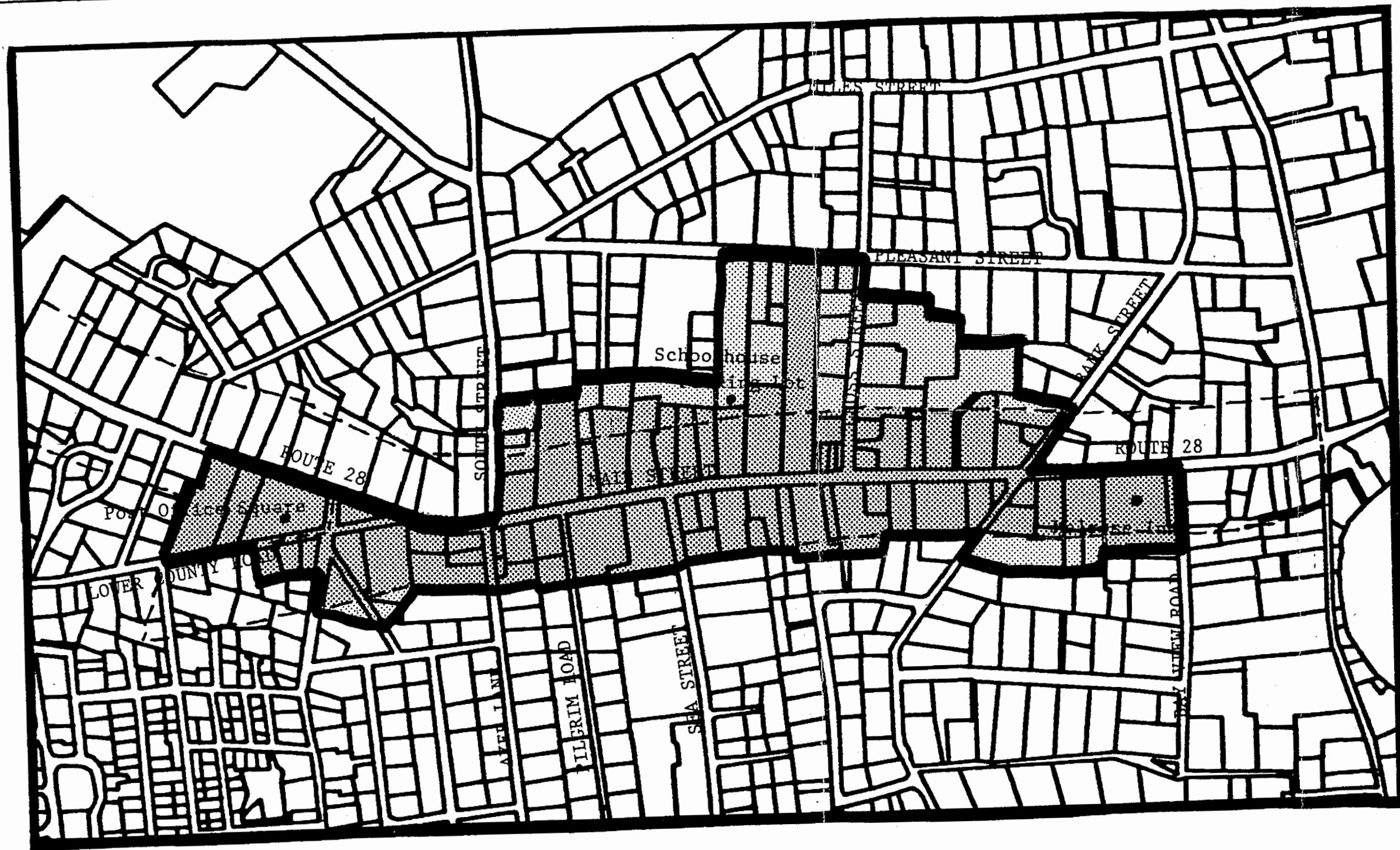



LEGEND	
	REGIONAL SCALE USES
	SMALL-SCALE MIXED COMMERCIAL/RESIDENTIAL

FIGURE 1.2



LEGEND

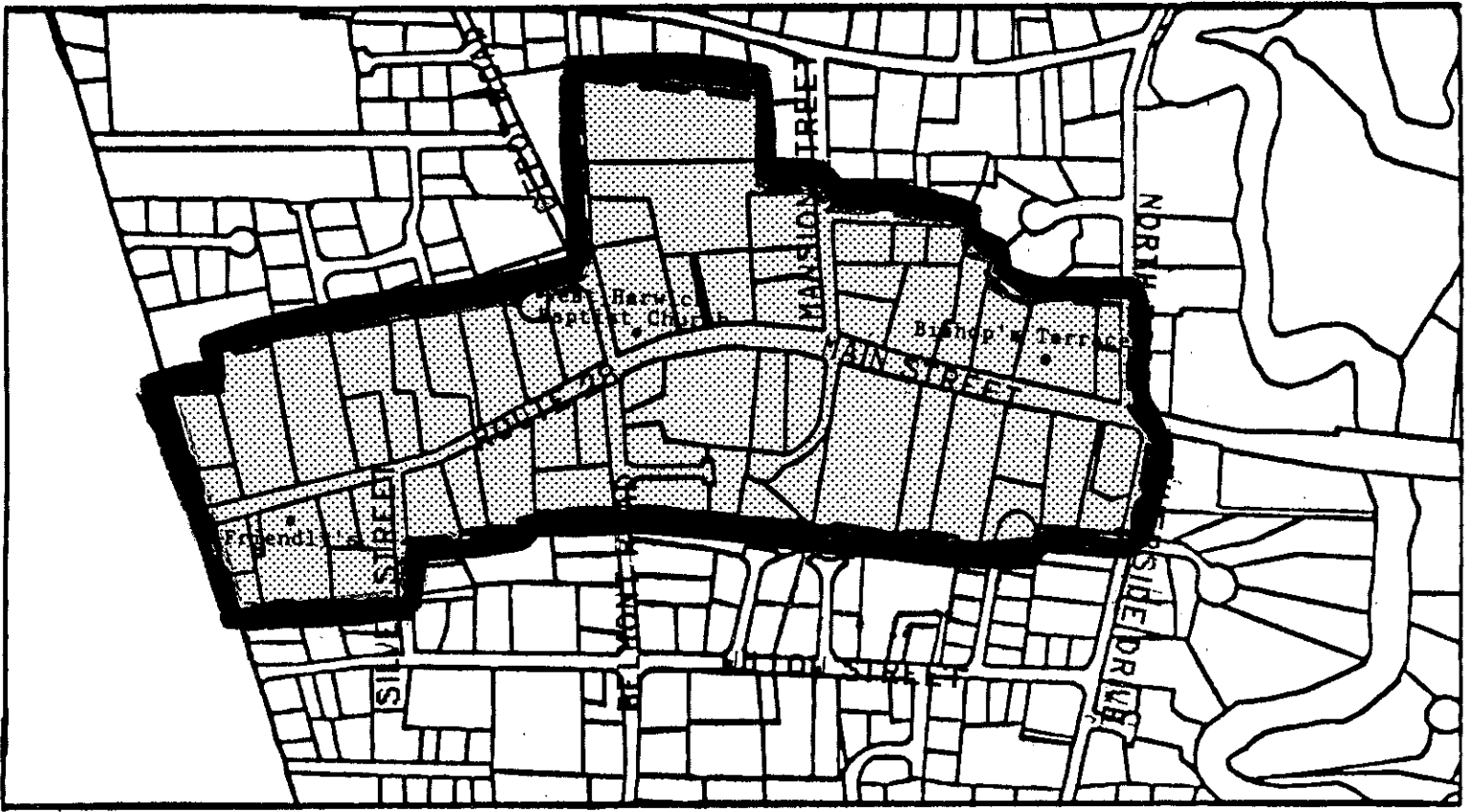
-  PHASE I AREA
-  PHASE II AREA
-  EXISTING COMMERCIAL ZONING BOUNDARY



**PROPOSED
HARWICH PORT
CENTER
GROWTH CENTER**

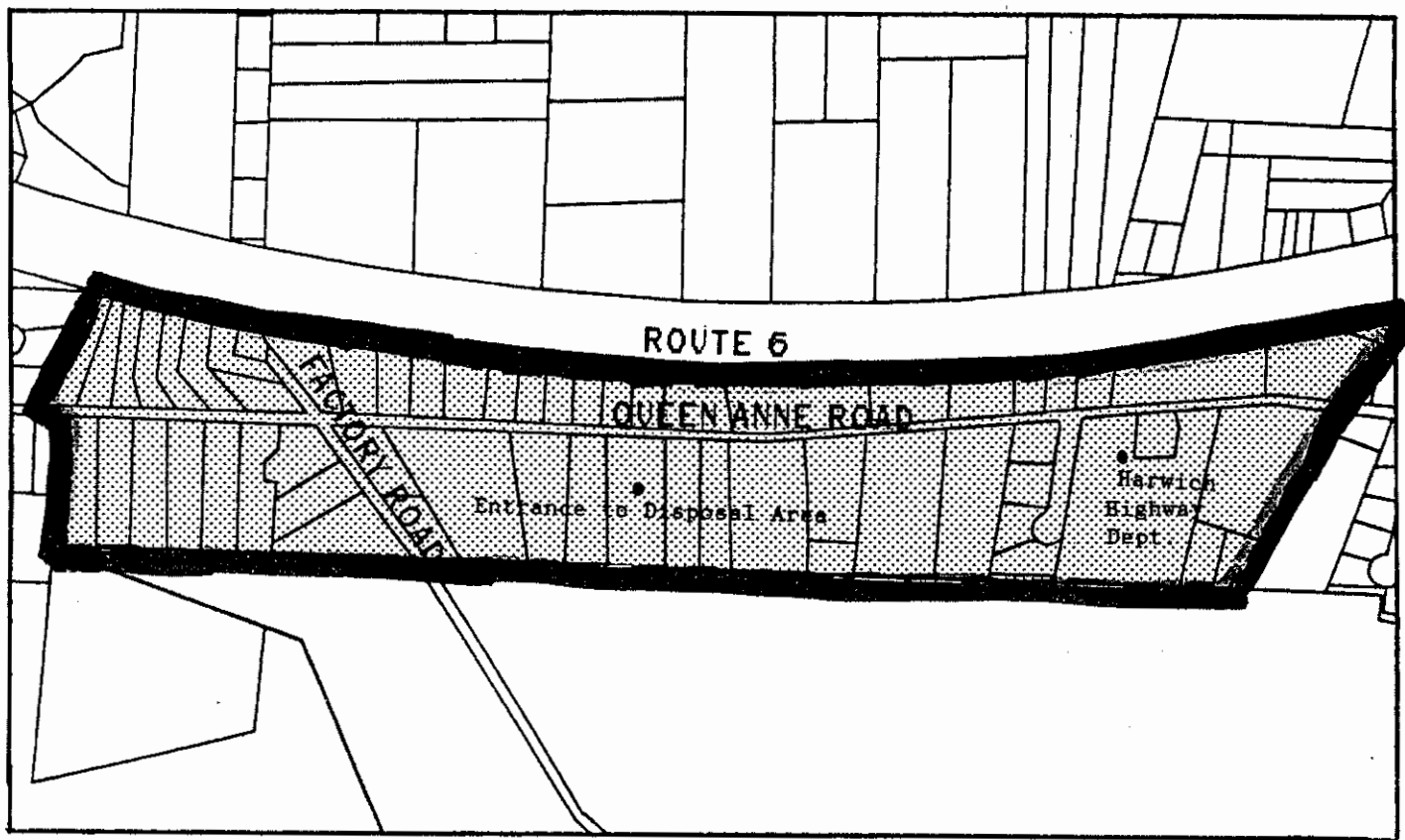
OCTOBER 1, 1993

FIGURE 1.3



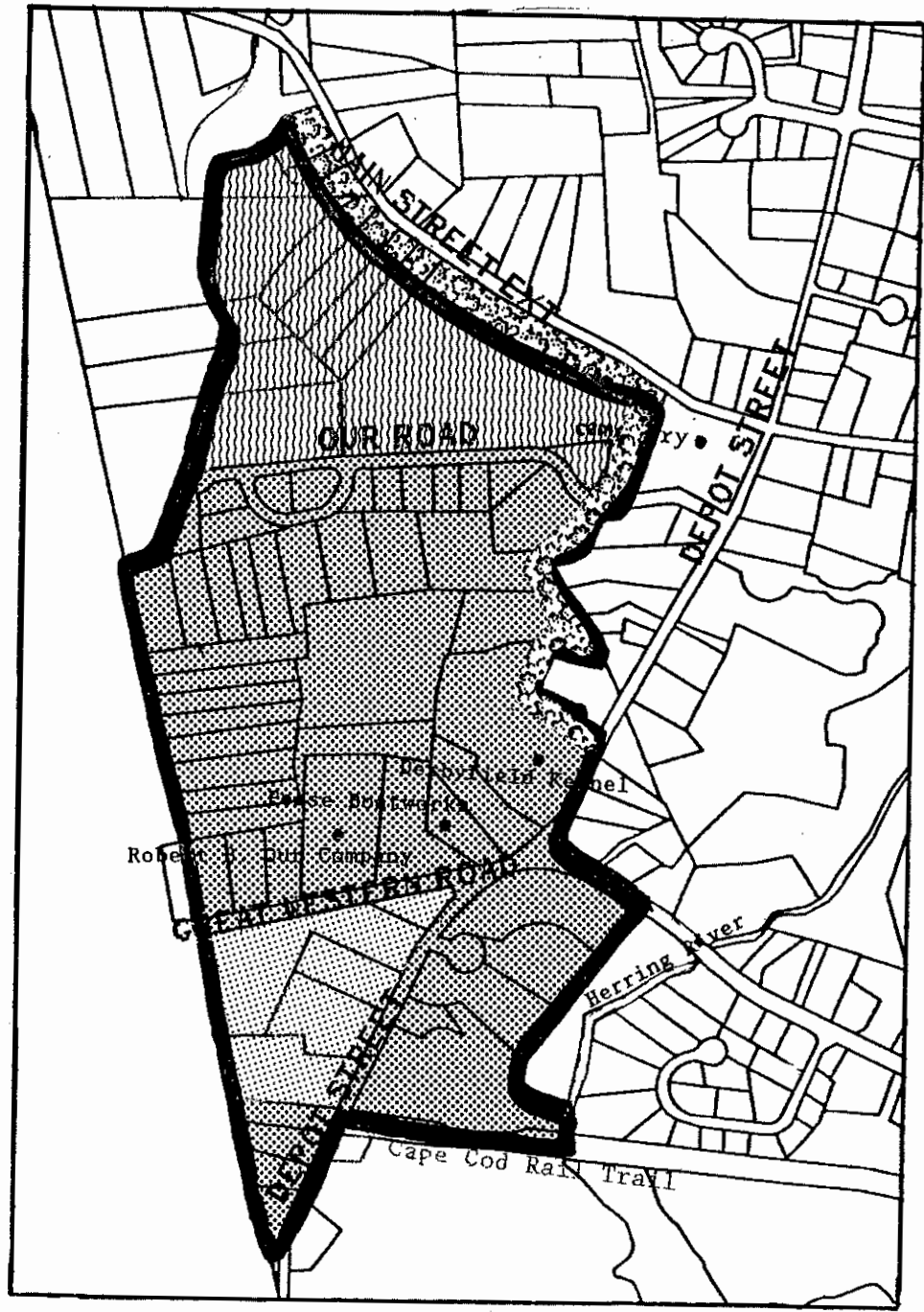
**PROPOSED
WEST HARWICH
GROWTH CENTER**

FIGURE 1.4







**PROPOSED
INDUSTRIAL
GROWTH CENTER**

FIGURE 1.5

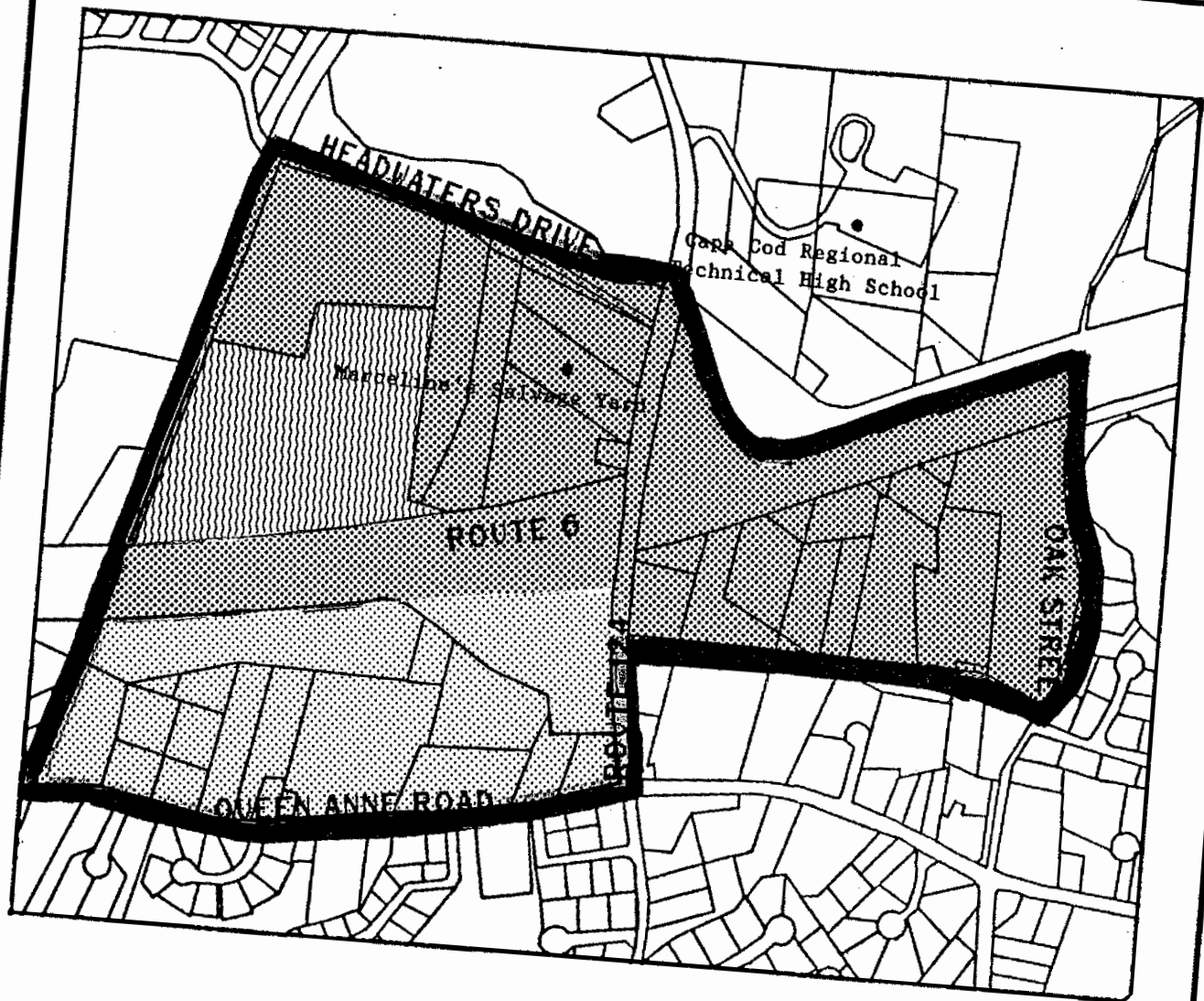


PROPOSED NORTH HARWICH GROWTH CENTER

LEGEND	
	INDUSTRIAL GROWTH AREA
	INDUSTRIAL GROWTH AREA INCLUDING NEIGHBORHOOD RETAIL/SERVICE AREA
	MARGINAL INDUSTRIAL AREA
	100 FOOT BUFFER AREA

OCTOBER 1, 1993

FIGURE 1.6



PROPOSED PLEASANT LAKE GROWTH CENTER

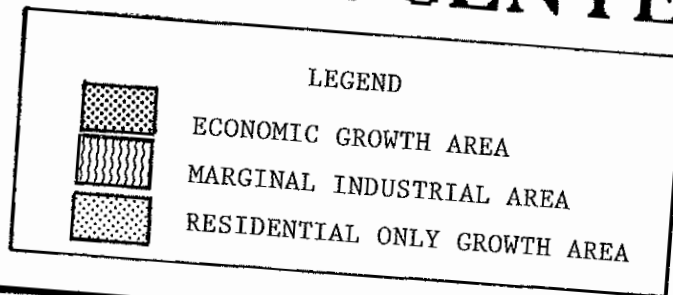


FIGURE 1.7

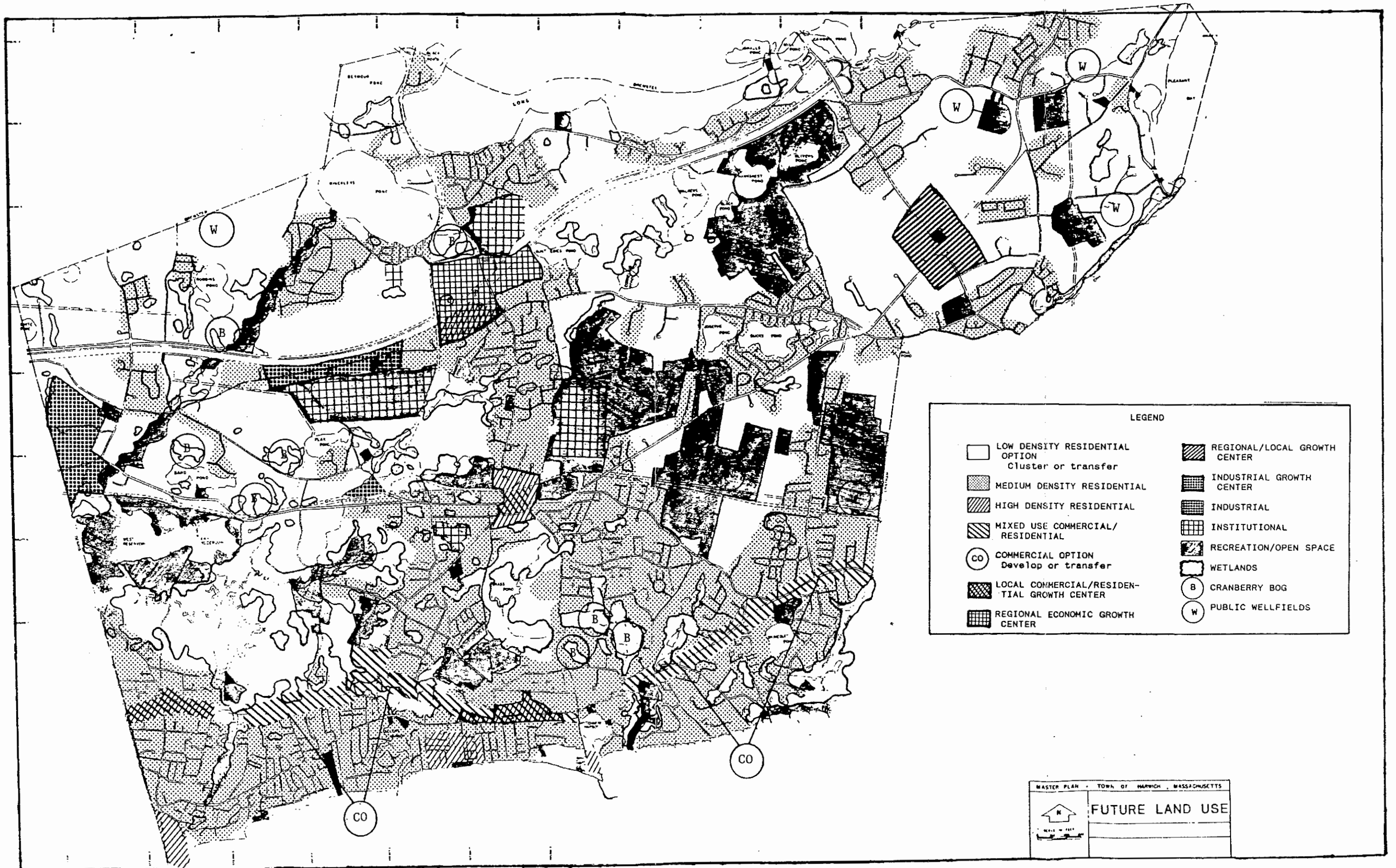
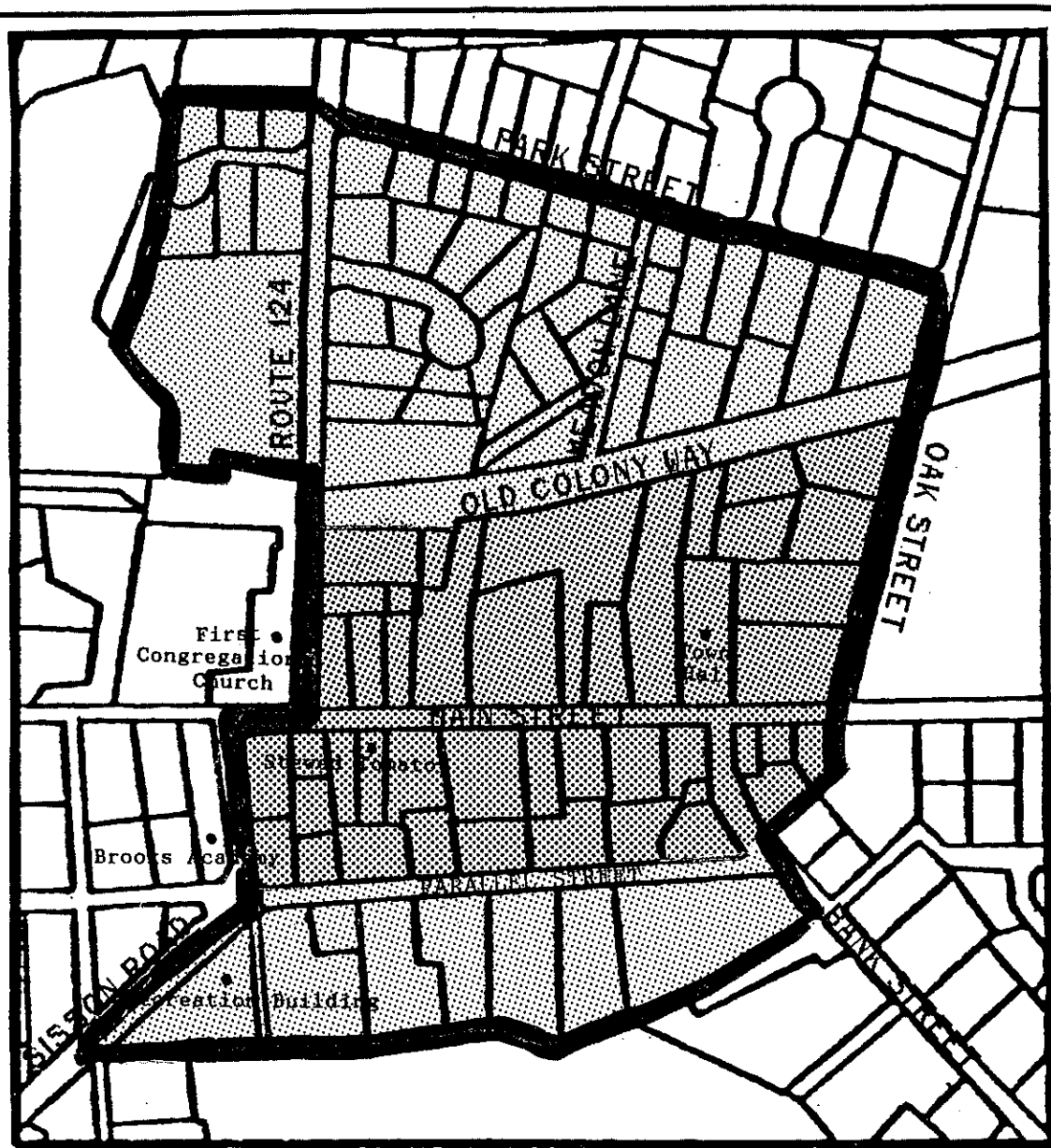




FIGURE 1.8



PROPOSED HARWICH CENTER GROWTH CENTER

LEGEND	
	Mixed Commercial/ Residential Growth Area
	Area for Residential Growth Only

OCTOBER 1, 1993

FIGURE 1.9

FIGURE 1.10

