

Coastal Zone
Information
Center

COMPREHENSIVE PLAN

Cape Elizabeth
1980

COASTAL ZONE
INFORMATION CENTER



Maine: Coastal Zone Management Program

HT
393
.M3
C6
1980

"Thus, effective land use policy should not be looked upon as a matter of stopping decisions or of restricting freedom of choice but rather of assuring that choices are made wisely, that a full range of alternatives is considered, and that decisions which impact broadly on society are made in a process which gives reasonable opportunity for the interests of society as a whole to be taken into account."

Russell Train, Chairman of the Council on Environmental Quality



TOWN OF CAPE ELIZABETH

TOWN HALL
320 OCEAN HOUSE ROAD
CAPE ELIZABETH, MAINE 04107

Property of CSC Library

25 June 1980

The Cape Elizabeth Town Council
Cape Elizabeth Town Hall
Cape Elizabeth, Maine 04107

U. S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
CHARLESTON, SC 29405-2413

Dear Members of the Town Council:

The Comprehensive Planning Commission has prepared this draft of the Cape Elizabeth Comprehensive Plan and presents it to you and to the Town for review and adoption.

We thank you and all the committees, boards, groups and individuals who have participated for your interest and efforts, which we believe are fairly reflected in this Plan. We also acknowledge gratefully the importance and skill of the work done by the Council of Governments to assemble and analyze information, lead us to understanding, and set down our conclusions. We have been fortunate to receive financial assistance through the State Planning Office, which assistance includes funds from the Office of Coastal Zone Management.

We look forward to seeing this Plan take its place in the continuing effort we are all making to face our future constructively, confident that we can preserve and improve our Town as a place in which to live and work with benefit and pride.

Sincerely,

George B. Terrien, Chairman
Cape Elizabeth Comprehensive Planning Commission

SEP 8 1980

HT 293.112 26 1980

A LAND USE POLICY FOR CAPE ELIZABETH

Prepared by

The Comprehensive Plan Committee

George B. Terrien, Chairman

Diane Shevenell, Cape Elizabeth Garden Club
Ralph Rautenberg, Board of Voter Registration
Robert Lindquist, Sewer Study Commission
John P. Erler, Board of Sewer Appeals
Judith Simonds, CATV Regulatory Board
Nason Smith, Ft. Williams Adv. Commission
Louise Tetreau, Area Development Council
Gordon B. Davis, Transit District Rep.
Mary McGushin, Planning Board
Tom Summers, Planning Board
Allen Dussault, Zoning Board of Appeals
Walter Simpson, Civil Service Commission
Joseph Stocks, Board of Health
Paul Creteau, Board of Asses. Review
Kenneth Woods, Trustees, Thomas Mem. Library
Lyman Cousens, Trustees, Riverside Mem. Park
Peter Rand, Conservation Commission
Josephine Cobb, Bd. of Historic Pres. Adv.
Pauline Pero, Bd. of Historical Pres. Adv.
John Amerling, Town Council
Marco DeSalle, Town Council
Stella Patten, Town Council
Stephen Larned, Park & Recreation Commission
David Fisher, School Board
Joanne Ryder, Secretary

and

The Greater Portland Council of Governments

Joseph Ziepniewski, A.I.C.P., Planning Director
Frank O'Hara, Housing Planner
Neil Wallace, Graphics
E. J. Silke, Editor
Maddy Fournier, Secretary

"Financial assistance for the preparation of this document has been provided by the Coastal Zone Management Act of 1972, administered by the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration and the Coastal Planning Program of the Maine State Planning Office."

PREFACE

The Comprehensive Plan Committee was charged by the town with the preparation of a comprehensive plan, policies and necessary land use regulations. It is intended that the land use policies in this report, combined with specific studies in areas such as population, environment, housing, sewage, traffic, and water supply, will constitute the comprehensive plan.

The purpose of the land use policies is to establish an overall policy framework which can be used to guide town decisions on individual programs, expenditures, and/or regulations. The importance of establishing this framework has increased in recent years as a result of the increasing complexity of local government decisions, combined with limited tax resources.

Cape Elizabeth is currently faced with many important decisions. The town is completing plans for a Southern Cape Sewer System. The preservation of rural open areas is an increasingly important issue. Accommodating future growth in a fiscally and aesthetically responsible manner is a concern. Maintaining a quality education in the face of declining enrollments will be a difficult task. How the town deals with these issues will have a profound impact on the future tax burden and quality of life of Cape Elizabeth residents.

The temptation facing the town is to deal with each individual issue as it arises. This policy of "reaction" has many advantages. It allows the decision makers considerable latitude and enables decisions on difficult issues to be postponed until absolutely necessary. However, in this process, interrelationships between decisions are often neglected.

As an example, the construction of a sewer system to abate pollution may increase development pressure, storm-water runoff and traffic congestion, and negatively impact "the quality of life".

The Comprehensive Plan Committee has prepared the Comprehensive Plan to serve as the overall policy framework for the Town. This framework can be used to evaluate the necessity and impact of individual programs, laws, and budgets. The Comprehensive Plan attempts to relate the major elements of land use to provide a coordinated view of what Cape Elizabeth's future could be.

A LAND USE POLICY FOR CAPE ELIZABETH

	Page
Preface	i.
I. LAND USE GOALS	1
II. LAND USE: BACKGROUND STUDIES	3
Conservation	3
1. Environmental Factors	3
2. Watersheds	3
Development	4
1. Population	4
2. School Enrollments	4
3. Housing	4
Community Facilities	5
1. Southern Cape Sewer System	5
III. LAND USE POLICIES AND ISSUES	6
A. Equity in Land	6
B. Community Facilities	8
C. Social Diversity	10
D. Environmental Quality	11
E. Industrial Development	13
IV. LAND USE PLAN	15
A. Medium Density Residential Area	15
B. Public Land and Quasi-Public Land	15
C. Resource Protection	15
D. Medium Density Residential (Southern Cape Area)	16
E. Rural Lands Area	16
F. Areas of Local Significance	18
G. Local Business Districts	18
MAP - Rural Lands Area	17

APPENDIX

A. Population

A. Overall Growth	A-1
B. Age Characteristics	A-3
C. School Children	A-5
D. School Enrollment to 1990 - Three Models	A-10
E. Social and Economic Characteristics	A-13

Technical Appendix on School Projections	A-17
--	------

Description of Models	A-18
Assumptions of School Enrollment Projection Model	A-19
Assumptions of Housing Projection Model	A-20
Worksheets	A-21

B. Housing

A. Introduction	B-1
B. The Housing Stock	B-3
C. The Cost of Housing	B-5
D. The School Enrollment Issue	B-7
E. The Issue of Diversity	B-9

Technical Appendix on Housing Costs	B-11
-------------------------------------	------

C. Cape Elizabeth Watersheds	C-1
------------------------------	-----

CAPE ELIZABETH COMPREHENSIVE PLAN

MAP INDEX

	Following Page
EXISTING LAND USE	3
SOILS	3
LAND OWNERSHIP	4
WATER SUPPLY	5
AREAS OF LOCAL SIGNIFICANCE	12
WATER RESOURCES	12
NATURAL FEATURES	15
PROPOSED ZONING	18
PROPOSED LAND USE PLAN	18

I. Land Use Goals

Cape Elizabeth has come through periods of slow suburbanization (1920-1950); rapid growth, doubling the population in 20 years, (1950-1970); and a tapering off of growth in the 1970's, as most new development occurred in more rural areas. Judging from proposals before the Planning Board at the present time, it appears that Cape Elizabeth's growth rate may pick up again in the future. Two factors especially contribute to this renewed activity: (1) The Cape's sewer plans; and (2) a reduction in the attractiveness of rural towns for development because of high transportation costs, increases in regulations and land costs, cutbacks in the Farmer's Home program. Future development will probably not be the same as the 1950's single-family home subdivision development. Both the high cost of construction and new life-style patterns, make it likely that cluster and multi-family housing will play a more significant role in Cape Elizabeth's future growth than was true in the 1950's, 1960's and 1970's.

The prospect of entering a new phase of growth throws a new light on other issues which have been studied and discussed in the Cape in recent years. These include the design and financing of a sewer system in southern Cape Elizabeth; the preservation of agricultural lands; the development of a greenbelt system of open space preservation; the preservation of scenic and historic features; the maintenance of water quality in the Great Pond watershed and Spurwink Estuary; the maintenance of a quality school program in the face of declining enrollments; the achievement of "social diversity" of ages, occupations, incomes, and cultural types; the appropriate disposition of Fort Williams; and finally, the maintenance of a reasonable tax rate and sewer assessment rate.

These issues have been studied and discussed independently by many groups in Cape Elizabeth, including the Planning Board, the Conservation Commission, the School Board, Fort Williams Study Committees, the Sewer Committee, and the Town Council. The Comprehensive Plan Committee reviewed the work of all these groups, and tried to integrate all of their concerns into one overall plan.

This process was not easy. Financial concerns tend to argue for more development, so that sewer fees will be lower and school enrollment maintained. Environmental concerns tend to argue for less development, the maintenance of open space and strict controls on new residential growth. Social and legal concerns tend to complicate the issues even further.

Having said this, however, the Comprehensive Plan Committee found common threads running through all of these issues. These common threads provide the basis from which the Committee worked. They can be phrased in terms of the goals which this Comprehensive Plan seeks to accomplish. They are:

GOAL #1 - Preservation of the rural character of Cape Elizabeth.

This goal includes taking actions to: preserve agricultural land; develop an open space greenbelt; preserve the water quality of the Great Pond watershed and Spurwink Estuary; and preserve rural and scenic land to help maintain scenic views from public ways.

GOAL #2 - Achievement of balanced development in Cape Elizabeth.

This goal includes taking actions to encourage a diversity of housing types and costs, and to encourage commercial and research, office, park-type developments which are non-disruptive to the residential and rural character of the town.

It is important to recognize that housing types which are allowed, encourage:

- a. Strong community involvement;
- b. Concern for the maintenance and improvement of property values; and
- c. A stable, long term resident population

GOAL #3 - Provision of quality community services in Cape Elizabeth.

This goal includes actions to maintain the educational quality of Cape Schools, and to properly plan and efficiently utilize community facilities.

GOAL #4 - Achievement of the above conservation, development and service goals in a manner which avoids unfair advantage or disadvantage to individual landowners and taxpayers.

This goal includes actions to minimize town costs with respect to the three preceding goals. It also includes development of a land use system which promotes equality among landowners in terms of regulations and public improvements.

II. Land Use: Background Studies

Conservation

In developing a comprehensive land use policy it is important to consider a number of factors which can influence land use patterns. The Comprehensive Plan Committee has reviewed a number of these issues in detail (some of these detailed reports are enclosed in the appendix). The following is a brief summary of these issues.

- 1) Environmental Factors - The Conservation Commission has developed detailed studies on environmentally sensitive lands and recommended a greenbelt open space system for Cape Elizabeth. The Conservation Commission also recommended that no development be allowed in the following types of areas:
 - a) Sebago Mucky Peat
 - b) Coastal Dunes
 - c) Tidal Marsh
 - d) Slopes over 15 percent
 - e) Flood hazard and resource protection areas
 - f) Wetland soils under 12 inches to seasonal high water (Limitation restricted to subsurface septic disposal)

The Conservation Commission also suggests that any proposed development in the following areas consider both the historic and/or environmental sensitivity of the site, as well as the possibility of preserving features deemed worthy of such by the Commission.

CONCLUSION - With the Development of the sewer system and projected population growth, this may well be our last chance to preserve significant unique areas of the town for future generations.

- 2) Watersheds - The Great Pond watershed is the most sensitive watershed in Cape Elizabeth. Future developments in this watershed should be designed to limit the rate and volume of runoff to that occurring "naturally" and the amount of impervious surface to 10 to 15 percent of the site.

CONCLUSION - The Spurwink Estuary will become cleaner as Scarborough and Cape Elizabeth construct sewage treatment systems. Stormwater runoff contamination will, therefore, remain as the most important threat to its water quality.

Development

- 1) Population - The Cape's past steady growth rate is projected to continue in the future.

TABLE 1
Cape Elizabeth's Population¹

1950 -	3,816
1960 -	5,505
1970 -	7,873
1975 -	8,400
1980 -	8,900
1985 -	9,400
1990 -	9,900
1995 -	10,400
2000 -	10,900

This moderate growth rate is consistent with regional projections which would mean about 75 new housing units per year between now and 1990. This would represent an increased rate over the 70's which averaged about 50 units per year.

CONCLUSION - Even a moderate growth rate will bring increased new growth to Cape Elizabeth. The construction of the Southern Cape Sewer could increase the growth rate substantially.

- 2) School Enrollments - The existing school physical plant was built to accommodate 2200 plus students. Population projections using a moderate growth rate (75 units per year) show a levelling off of students at the 1350 level by the late 1980's. Even a high growth model of 175 housing units per year has the school enrollment dipping to 1850 in the 1981-1983 period.

An increased growth rate does not solve the school enrollment problem and the school system must look to internal changes to resolve this issue.

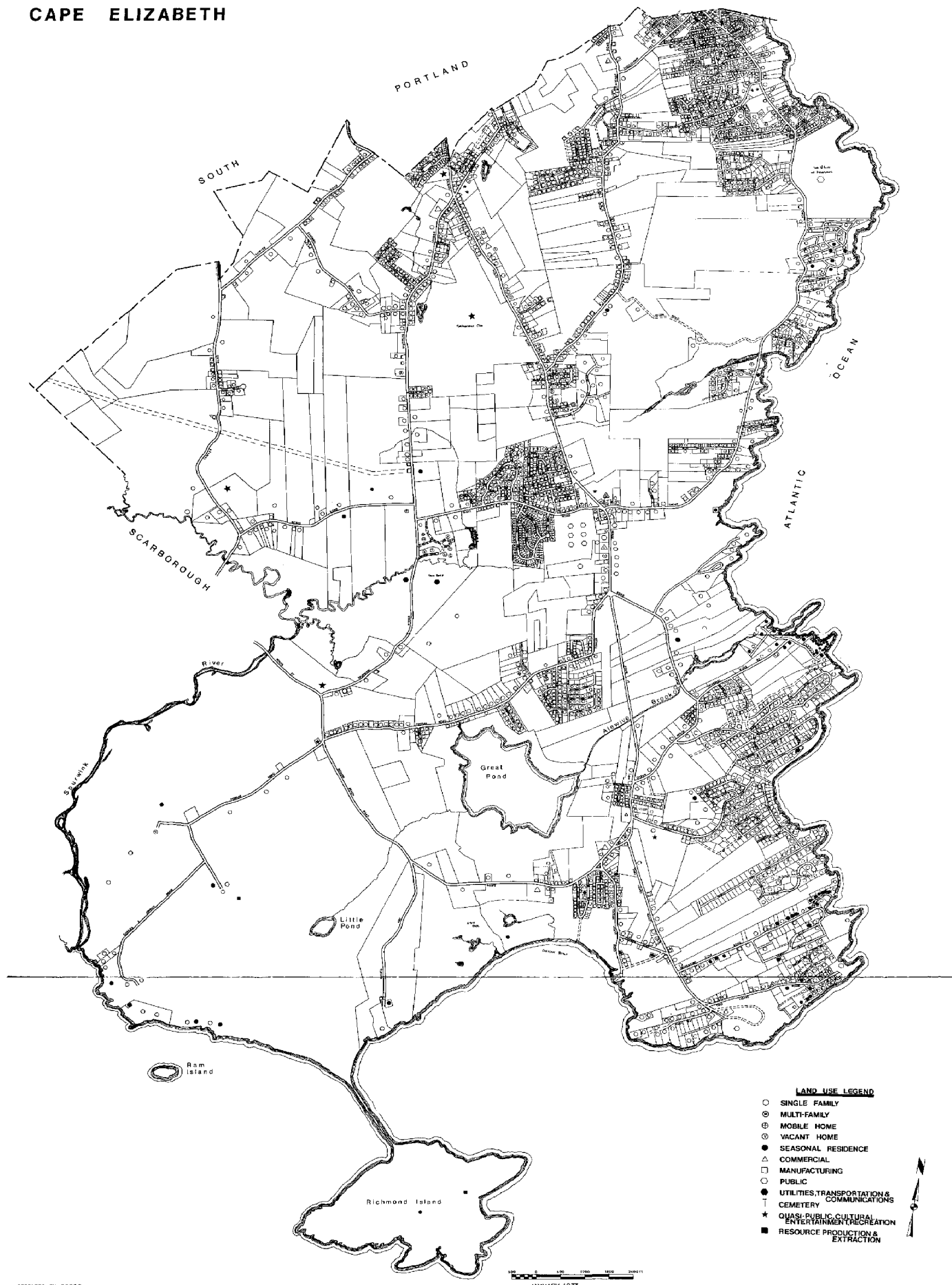
CONCLUSION - The challenge of maintaining a quality school system in light of a declining school enrollment will be a continuing problem.

- 3) Housing - Only one third of the housing which becomes available in Cape Elizabeth each year is affordable to someone with an income under \$20,000. In Gorham, over four-fifths of the available housing could be afforded by families with incomes under \$20,000.

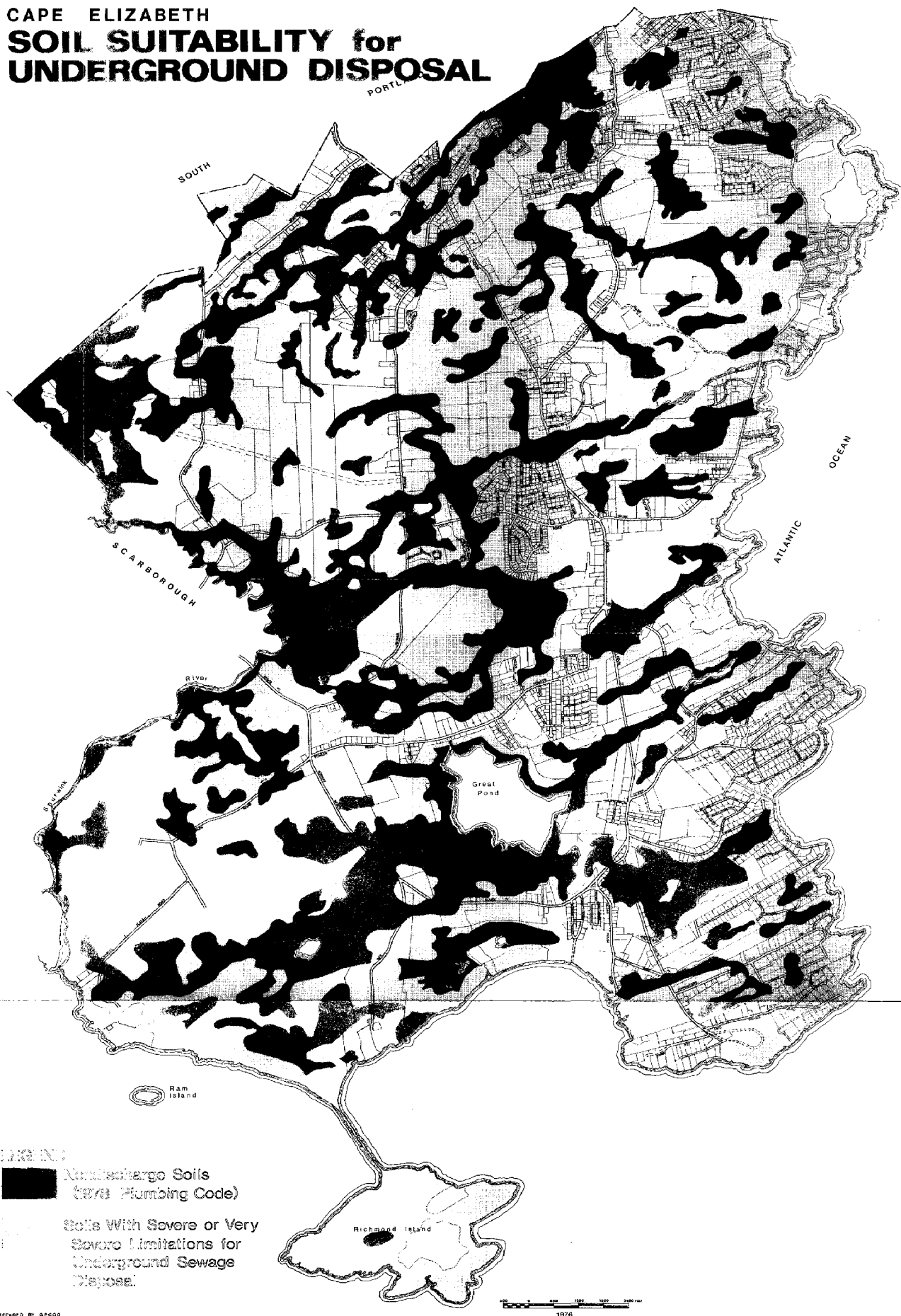
The Planning Board has stated that one of its goals is to have a population with a "heterogeneity of incomes, social and cultural groups, occupations, ages, etc." This is clearly impossible in the present situation, with the majority of housing consisting of expensive single family homes.

¹ The Greater Portland Area - Past Trends and Future Projections, GPCOG, 1977.

CAPE ELIZABETH

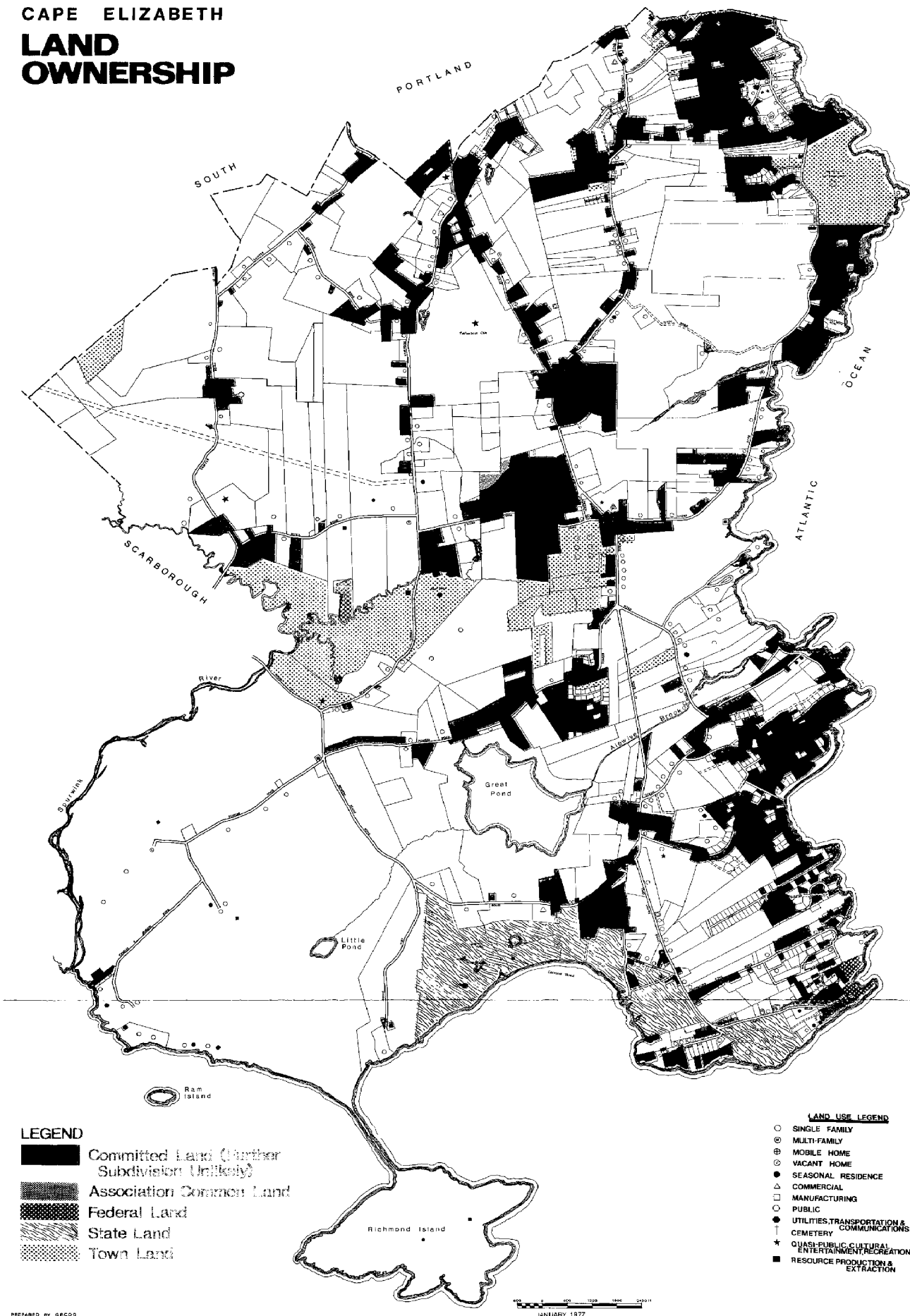


CAPE ELIZABETH
**SOIL SUITABILITY for
 UNDERGROUND DISPOSAL**








LEGEND
 [Solid Black] Non-discharge Soils
 (1978 Plumbing Code)
 [Stippled] Soils With Severe or Very
 Severe Limitations for
 Underground Sewage
 Disposal.













CAPE ELIZABETH LAND OWNERSHIP



LEGEND

-  Committed Land (Further Subdivision Unlikely)
-  Association Common Land
-  Federal Land
-  State Land
-  Town Land

LAND USE LEGEND

-  SINGLE FAMILY
-  MULTI-FAMILY
-  MOBILE HOME
-  VACANT HOME
-  SEASONAL RESIDENCE
-  COMMERCIAL
-  MANUFACTURING
-  PUBLIC
-  UTILITIES, TRANSPORTATION & COMMUNICATIONS
-  CEMETERY
-  QUASI-PUBLIC CULTURAL ENTERTAINMENT/RECREATION
-  RESOURCE PRODUCTION & EXTRACTION

Community Facilities

With land and construction costs high in the Cape, it is unlikely that the private market can ever produce housing which is affordable to a moderate income family in the Greater Portland region.

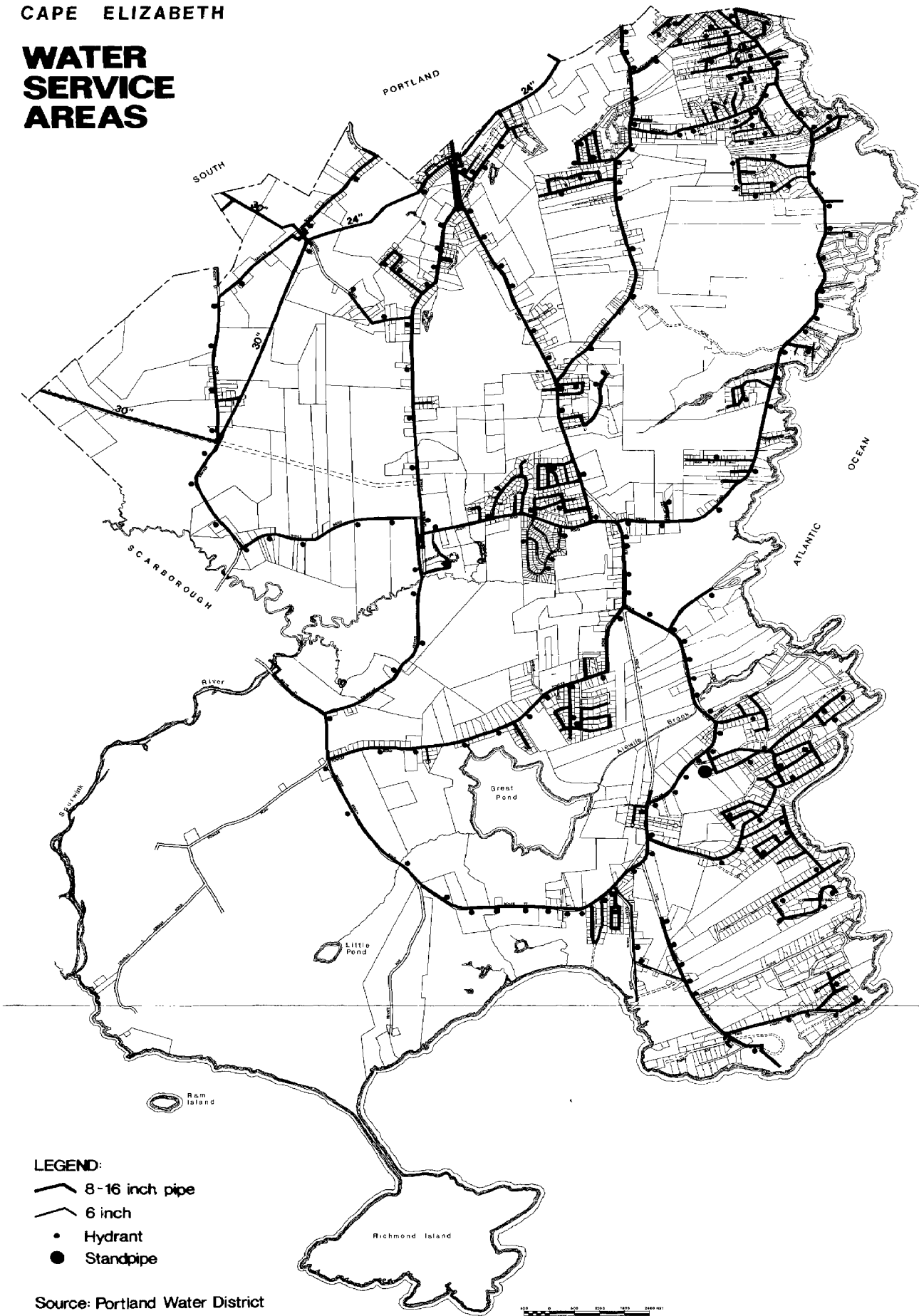
CONCLUSION - To achieve even a small measure of social diversity, the town will have to turn to federally-subsidized housing, such as the elderly housing constructed at Colonial Village under the Section 8 housing program.

- 1) Southern Cape Sewer System - A final configuration for the Southern Cape Sewer System which allows for only minor infill growth has been made. While funding for this system is currently frozen, it should be built over the next 3-5 years.





CONCLUSION - Any density increases contemplated by sewer extensions beyond existing Medium Density Residential districts should be accomplished through a program of permanent transferable development rights.

CAPE ELIZABETH

WATER SERVICE AREAS



LEGEND:

-  8-16 inch pipe
-  6 inch
-  Hydrant
-  Standpipe

Source: Portland Water District

III. Land Use Policies and Issues

A. Equity In Land

In the Background Studies section of this report, we reviewed both the natural and man-made resources of Cape Elizabeth and tried to evaluate their impact on future growth and land use. In this section, we will identify those issues and policies which will be critical to the future development of Cape Elizabeth. Hopefully, these policies can be used as a basis for developing, evaluating and updating the town's laws, regulations, programs, and budgets.

There seems to be a general consensus in Cape Elizabeth and in the law that certain areas of the community should be excluded from development because of the natural conditions of the land. Where these conditions can be shown to have a substantial relationship to the public's health, safety, and welfare (i.e., flood hazard or ability to support a subsurface disposal system) severe restrictions on potential development can and should be sustained. There are other areas of the community (agricultural lands, scenic areas, areas with little feasibility of being sewerred, open spaces) which for a number of public-interest reasons would be best maintained with little or no growth. These public interest reasons include:

- 1) Maintaining a balance between developed areas and open space.
- 2) Encouraging development in those areas served by public utilities in order to maintain cost-effective services for the residents and the town.
- 3) Planning for future growth to avoid the monotony of sprawl.

The goal of maintaining this rural atmosphere has been restated in study after study. In many cases, the desires of the land owners may match the aspirations of the town, but the economic realities of equity require that potential for highest use be retained. In other areas of the community the public investment in sewers and other facilities creates a windfall profit for adjacent landowners. The problem then becomes one of maintaining a fair equity for landowners throughout the community and, at the same time, developing a land use policy which encourages growth in certain areas, discourages it in certain areas, and prohibits it in others.

To resolve this dilemma, the proposed land use regulation system is tied to these conclusions:

- CONCLUSION 1 - Certain land by its natural condition should not be developed. Such development should be prohibited by legally-sustainable restrictions.
- CONCLUSION 2 - Each land owner has a right to develop his land within its natural ability to sustain development.
- CONCLUSION 3 - Development density of greater than one unit per 2 acres will most likely require public investments for sewers to sustain the development in the long run (15 to 25 years).

CONCLUSION 4 - Traditional zoning coupled with the existing system of public improvements (sewer, waters, improved road network) creates a system of windfalls for some landowners at the expense of others.

CONCLUSION 5 - From a town-wide perspective, the most desirable future would include preserving agricultural lands, maintaining basically rural open space areas, and accommodating future growth in a logical and financially responsible manner, while protecting an individual's investment in his land.

The net result of such a land use regulation system would be:

- 1) To direct growth away from areas of the community designated rural.
- 2) To maintain and protect the economic value and property rights of landowners throughout the community including those areas designated rural.
- 3) To encourage higher density growth in those areas which can best accommodate that growth. (e.g., areas with developed sewer and water systems, etc.)
- 4) To promote a diversified landscape with clustered development characterized by a cost-effective smaller network of utilities.

Recommendations

- 1) *The development of a transfer of development rights program.*
- 2) *The development of a new zoning ordinance.*

B. Community Facilities

Capital expenditures for community facilities - such as schools, roads, sewers, and water lines - form a major portion of local government expenses. Yet very often a community does not seem to be in control of these expenditures. Instead, it seems to be responding to external pressures and problems, such as new residential growth, or new federal laws. The local sewer system is a case in point - a situation in which an expensive sewer system is needed to help recent residential development meet federal water quality standards.

The dangers of a position of "reaction" are twofold:

- 1) Capital investments are made in a piecemeal, inefficient manner, causing higher per capita taxes.
- 2) A scattered, sprawl-like residential development pattern is encouraged, in response to scattered public improvements.

For maximum effectiveness, capital investment plans should be tied closely to land use and zoning plans. Public improvements should take place first in those areas of the community designated for future growth. Likewise, zoning and land use plans should be designed to encourage adequate economies of scale for public improvements through the designation of growth areas where more concentrated development can take place.

A second area of concern in Cape Elizabeth, beyond the sewer issue, is the situation resulting from the decline in enrollment in the local schools. This decline, which has totalled almost 400 students over the last eight years, is expected to continue into the early 1980's. Research done for the Comprehensive Plan Committee indicates that enrollment may stabilize at approximately 1350 students - nearly 1000 students less than in 1970.

This situation has come about simply because of demographics. The sharp reduction in the birth rate during the last ten years is now resulting in lowered school enrollments. This situation is true both region-wide and nationally. Residential growth in Cape Elizabeth will not be enough in absolute numbers, nor in housing type (much projected growth is in condominiums or apartments), to offset the projected loss.

On first glance, this situation might seem to be positive. Fewer students means less expense, and therefore lower taxes. The situation is not so simple, unfortunately. Much of the Cape's school expenses are fixed - administration operations and building maintenance, etc. These expenses will remain constant at any enrollment level. School revenue, however, will decrease. The substantial portion of the school budget paid for by the State is currently based on a per student reimbursement, and this will decrease in the years ahead. Finally, special services and extra-curricular programs will become more expensive, on a per capita basis, to maintain.

This sharp reduction in enrollment won't be totally absorbed until the early 1980's. Now is the time to begin planning to deal with this situation.

The Comprehensive Plan Committee recommends the following policies regarding community facilities.

POLICY #1 - Capital investment decisions should be closely tied to land use goals. Facilities designs should be supportive of an overall plan and population level and not depend significantly on a higher level of population to make them work efficiently.

POLICY #2 - The effects of social changes, such as the reduced birth rate and increase in the elderly population, should be reviewed for anticipated impacts on Cape Elizabeth community service needs.

Recommendations

- 1) *A Capital Improvements Program (C.I.P.) should be prepared annually by the Town Manager, reviewed by the Planning Board, and submitted to the Town Council for formal action. Improvements related to highway safety, such as lighting, widenings, and obstacle removal should be given high priority.*
- 2) *The School Board should initiate research into the financial and educational ramifications of declining school enrollments, and prepare recommendations for a desired curriculum and educational structure at the projected enrollment levels. The possibility of cooperative arrangements with other school districts should be explored. Alternative uses for unused portions of the physical plant should be investigated (e.g., community recreation and/or meeting facilities).*
- 3) *The Planning Board should monitor new growth on an annual basis, and propose revisions to the Capital Improvements Program and Comprehensive Plan as needed.*
- 4) *Energy costs will continue to rise and the town should continue to explore economically feasible alternatives for public transit.*

C. Social Diversity

The Cape Elizabeth Planning Board approved the following goal in 1977:

POLICY #1 - "Aim for a population which has a heterogeneity of incomes, social and cultural groups, occupations, ages, etc."

MEANS - "Permit a variety of housing densities and costs through land use regulation."

(P. 3, Local Growth Policy Statements, GPCOG, 1977)

The Comprehensive Plan Committee reaffirms this as a desirable policy. Such diversity would provide a richer, more pluralistic civic life, and a broader educational experience for Cape Elizabeth children.

At the same time, the Comprehensive Plan Committee recognizes severe practical limitations to achieving this goal. The cost of land in Cape Elizabeth is expensive. The cost of construction is expensive. Beyond this, the local market seems to be encouraging a type of housing far more expensive than either local costs or regulations would seem to require. The town can do little to change these facts.

There are, however, steps that the town can take to at least provide the opportunity for housing development which could serve broader income and social levels. These steps include:

Recommendations

- 1) *The Planning Board should review local regulations and review procedures to make sure that they do not add unnecessary costs to the construction of housing in Cape Elizabeth.*
- 2) *The Planning Board should prepare an "inclusionary" ordinance for Council action, which would provide a density bonus to a developer who mixes some subsidized housing in a proposed development.*
- 3) *The town should consider taking an active role in pursuing resources for federally-subsidized housing.*

D. Environmental Quality

In the process of developing the Comprehensive Plan, it has become clear that an important concern of residents is the natural amenity which is interwoven with residential areas throughout Cape Elizabeth. Preserving environmental quality while allowing for growth and change will be a great challenge over the next decade.

The Comprehensive Plan Committee recommends the following policies to help maintain the environmental quality of Cape Elizabeth.

POLICY #1 - Residential, commercial, and industrial development should be discouraged from locating on lands designated as sensitive including wetlands, floodplains, coastal dunes, steep slopes, and agricultural lands.

POLICY #2 - The preservation of sensitive lands, open space, and areas of local significance should be encouraged by utilizing a broad range of tools, including incentive clustering, fee simple acquisition, volunteer easements, resource protection district zoning, tax policy, and performance zoning.

Recommendations

- 1) *It is recommended that a town-wide stormwater ordinance be adopted which recognizes the particular sensitivity of the Great Pond and Spurwink River drainage basins to runoff. (This has been accomplished)*
- 2) *It is recommended that a public informational program on septic tank maintenance be developed, particularly for new construction and existing areas with a high rate of failure. A local plumbing code should be adopted which adequately protects the town from having to extend sewers to correct malfunctioning septic systems in rural areas.*

This code should require that an applicant pay a fee to the town and that the town hire the soils investigator. This would prevent the situation of an applicant "shopping" for a suitable soils test. The town should develop a program which would pay a rebate to homeowners who have their septic systems pumped on a regular basis.

- 3) *The Conservation Commission has developed a map showing areas of local significance which includes important natural scenic, historic, and architectural areas. The map and supporting documentation should be adopted as part of the Comprehensive Plan. The map will become part of a land use program and should be consulted by the Planning Board when reviewing subdivision and site plans.*
- 4) *The Resource Protection District should be extended to include other sensitive areas recommended by the Conservation Committee. (See Planned Land Use Plan.)*
- 5) *The town should encourage the use of easements as a means of preserving open space. Programs such as that of the Maine Coast Heritage Trust, as well as volunteer easements and private land trust activities should be utilized to the greatest extent possible. Multi-use easements (i.e., sewer and water used for trail systems) should also be investigated.*

- 6) *Environmental Performance Standards should be included in the town's land use regulation system. Performance standards can ensure environmental integrity while maintaining the flexibility necessary to ensure innovative design.*

E. Industrial Development.

The previous plan adopted by Cape Elizabeth held a dim view of attracting industry to Cape Elizabeth.

"It is very improbable that any industry will choose to become established in Cape Elizabeth for the following reasons:

- (a) the lack of available labor;
- (b) highway connections and location make it generally inaccessible to people, services, and major transportation routes;
- (c) present land-use is generally incompatible with industrial development.

Perhaps the best hope for attracting industry lies in the land west of Sawyer Road, where future development of the Scarborough-South Portland industrial areas may expand across the border."

The potential for industry in the Sawyer Road area was envisioned by previous Comprehensive Plans to be greatly strengthened by a proposed cross-town arterial. The potential for a cross-town arterial, because of low priority and increasing highway costs, today is about nil.

Scarborough has zoned its land abutting Cape Elizabeth as Rural Farm with a minimum lot size of two acres. South Portland's current zoning is Residential AA but the city is considering downzoning to a similar rural zone with a two acre lot size. It is extremely unlikely that the Sawyer Road area will be developed industrially over the next 20 years.

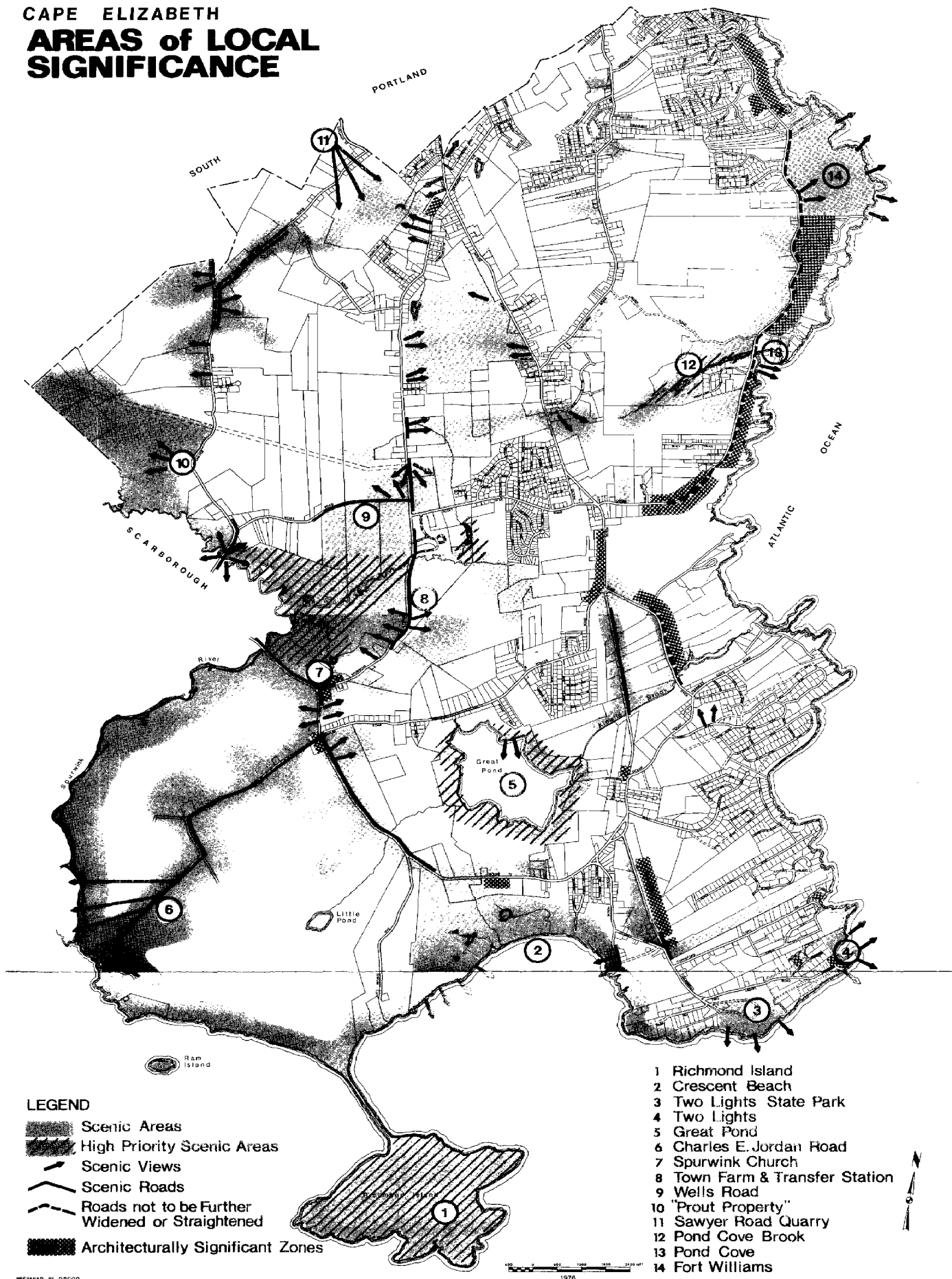
The Comprehensive Plan Committee recognizes the importance of trying to balance residential development with other types of non-residential use to strengthen the economic base of Cape Elizabeth. The Committee also recognizes that traditional industrial development with its demand for utilities, highway access, skilled labor force, and high traffic generation is not a realistic expectation for Cape Elizabeth in the near future.

As an alternative, the Comprehensive Plan Committee recommends the following policies:







POLICY #1 - Development by the town of a research office park floating zone* as a more realistic approach to economic development. Studies

* FLOATING ZONE - A floating zone is a device which a community may use when it has decided that particular type of use should be allowed, but has not decided the best location for the use. A district would be included in the text of the zoning ordinance describing the allowed uses, special exceptions, lot sizes and setback requirements. However, the legislative procedure in creating the floating use does not include delineating its boundaries on the official zoning map. The location of the zone is left for later determination by the municipal legislative body. The action may be initiated by the legislative body in the exercise of its responsibility for benefiting the public in general or by a petitioning landowner.

CAPE ELIZABETH AREAS of LOCAL SIGNIFICANCE

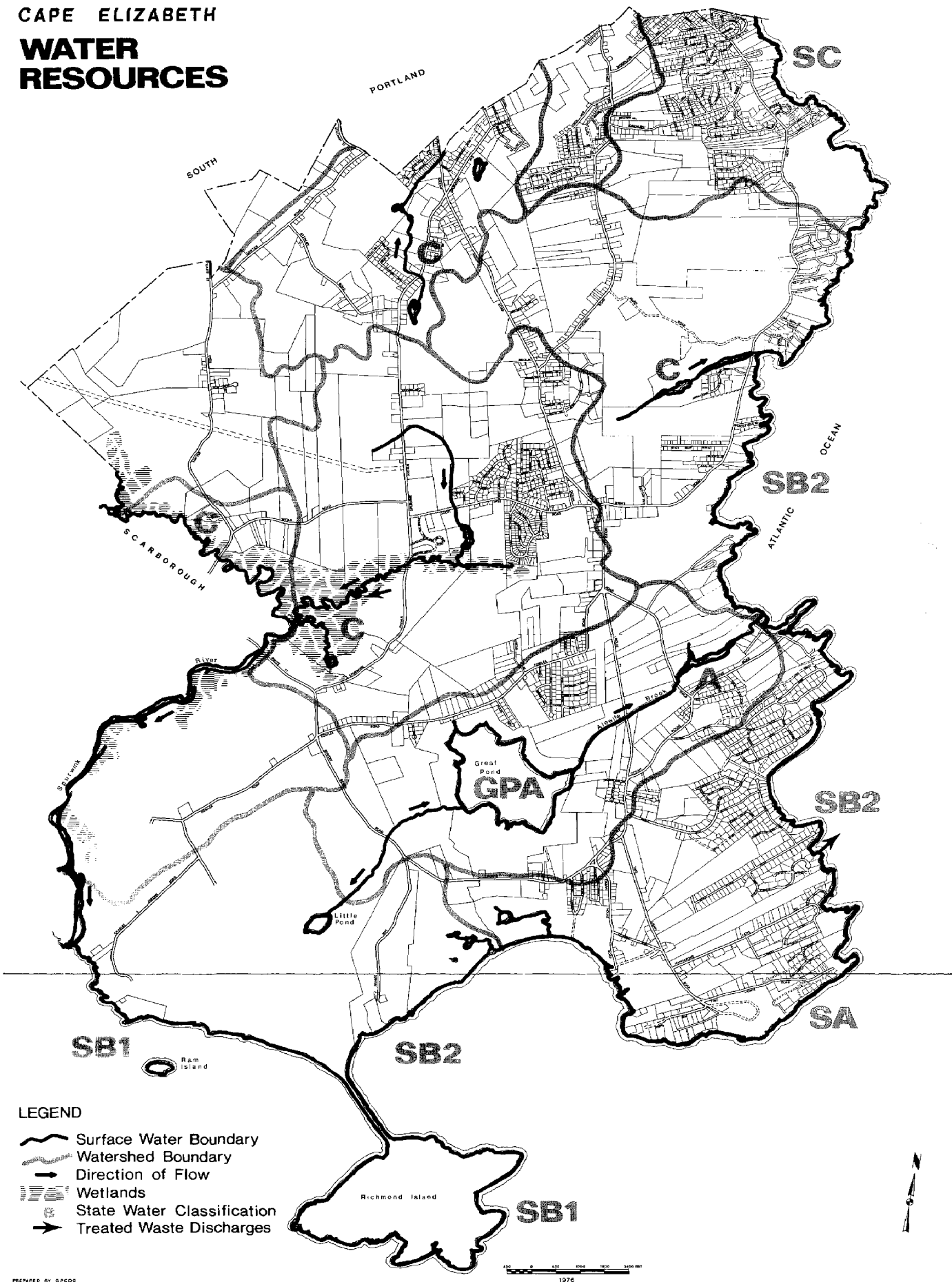


LEGEND

-  Scenic Areas
-  High Priority Scenic Areas
-  Scenic Views
-  Scenic Roads
-  Roads not to be Further Widened or Straightened
-  Architecturally Significant Zones

- 1 Richmond Island
- 2 Crescent Beach
- 3 Two Lights State Park
- 4 Two Lights
- 5 Great Pond
- 6 Charles E. Jordan Road
- 7 Spurwink Church
- 8 Town Farm & Transfer Station
- 9 Wells Road
- 10 "Prout Property"
- 11 Sawyer Road Quarry
- 12 Pond Cove Brook
- 13 Pond Cove
- 14 Fort Williams

CAPE ELIZABETH
WATER
RESOURCES



LEGEND

- Surface Water Boundary
- Watershed Boundary
- Direction of Flow
- Wetlands
- State Water Classification
- Treated Waste Discharges

POLICY #1 - regarding research office parks conducted by the Urban Land Institute indicate that quality of surroundings and being near a high income residential area is the second most important location criteria after accessibility.

POLICY #2 - Working with groups such as the Maine Development Foundation and the Area Development Council to promote the development of a business, office, research, or corporate headquarters park in Cape Elizabeth.

Recommendations

- 1) *Rezone Industrial land off Sawyer Road to Rural lands.*
- 2) *Develop Business-Industrial Floating Zone. (See Appendix.) Ensure that all necessary site and performance standards are met under any proposed re-zoning in order to protect abutting properties.*

IV. Land Use Plan

The land use plan provides, in one map, a generalized summary of the concepts and policies discussed in the previous sections of the plan. This plan shows the type of land use which is appropriate for each part of Cape Elizabeth, and indicates the intensity of use which would be most compatible with the town's utility plans and the land's physical capacity to support development. The land use plan is intended to provide overall guidance in the establishment of land use regulations. The land use plan divides the Cape into the following categories:

A. MEDIUM DENSITY RESIDENTIAL (M.D.R.)

The use of land in this area would be primarily residential and allowing related uses such as community facilities, and recreation areas. The M.D.R. District would be within the service area of the northern Cape Sewer System. This area is served with public sewer and water, and therefore residential development could occur at a density of 2 dwellings per acre with a minimum lot size of 20,000 square feet. Although the area is significantly developed already, there are still possibilities for large subdivisions. Public policy in this area should concentrate on the following points:

- 1) Protection and maintenance of Trout Brook as a natural resource and passive recreation area.
- 2) Acquisition and development of neighborhood parks, and playfields (specific recommendations should be forthcoming in the recreation section of the Comprehensive Plan).
- 3) Recognition in the Capital Improvement Program that this area is a significantly-developed residential area. Public policy should concentrate on stabilizing and improving the residential amenities through:
 - a. Regular maintenance and improvement of streets, sidewalks, drainage, utilities, and recreation areas.
 - b. Prevention of intrusions from non-residential uses.
 - c. Insuring that future development is compatible in terms of access, landscaping and buffering, and site layout.
 - d. Encouragement of clustering to maintain open space and add diversity to the area.

B. PUBLIC LAND AND QUASI-PUBLIC LAND

Federal, State and municipal lands are shown as public and are expected to remain as such throughout the planning period. The Purpoodock Club is shown as quasi-public. Any change from the existing use should be carefully evaluated by the Planning Board. Other association land is also shown as quasi-public.

C. RESOURCE PROTECTION

Resource Protection areas of Cape Elizabeth have significant environmental limitations which should limit their development potential to non-intensive uses. The town already has a Resource Protection District in its zoning

ordinance. Studies conducted during the development of this comprehensive plan indicate that other areas should be included in this category. These areas are shown as proposed Resource Protection District areas. In addition, it is recommended that the town consider buffering and clustering as methods to help maintain a subtle transition from developed areas to Resource Protection areas.

D. MEDIUM DENSITY RESIDENTIAL (Southern Cape Area)

This area would include the land within the proposed Southern Cape sewer service area. Traditionally in a coastal community like Cape Elizabeth, characterized by poor soils and shallow to bedrock conditions, the development of sewer systems could be the impetus for uncontrolled growth. After much debate and study, the town has chosen a sewer system configuration which will correct existing problems and allow for only minimum infill growth. As part of its deliberation on the sewer issue, the Comprehensive Plan Committee compared housing needs¹ with the amount of vacant land within the service area of the Northern Cape System, as well as the rural area and concluded that there was sufficient land available to meet a regional housing need. In attempting to assure that some of this future housing will be available to low and moderate income people, it is recommended that an inclusionary housing provision be added to the zoning ordinance.

A major concern of the Comprehensive Plan Committee and the town throughout the sewer debate has been the question of controlling the impact of sewer extensions on rural land. In attempting to develop a land use policy which can balance the goal of "Preserving Open Space and Rural Character" with a perceived regional housing demand, it is recommended that no sewer extensions be allowed beyond the M.D.R. zoning districts (both northern and southern) unless the following conditions are met:

- 1) Any proposals for sewer extensions beyond M.D.R. districts shown in this plan be in accordance with future Comprehensive Plan amendments. In particular, amendments should pay particular attention to the environmental impact, regional housing needs, and traffic impact of land use changes.
- 2) All density increases contemplated by sewer extensions beyond existing M.D.R. districts be accomplished through a program of permanent transferable development rights. The concurrent phasing of development and preservation would ensure that a balance was maintained and that community-wide benefits were derived from the \$8.5 million (1979 dollars) investments in public sewers.

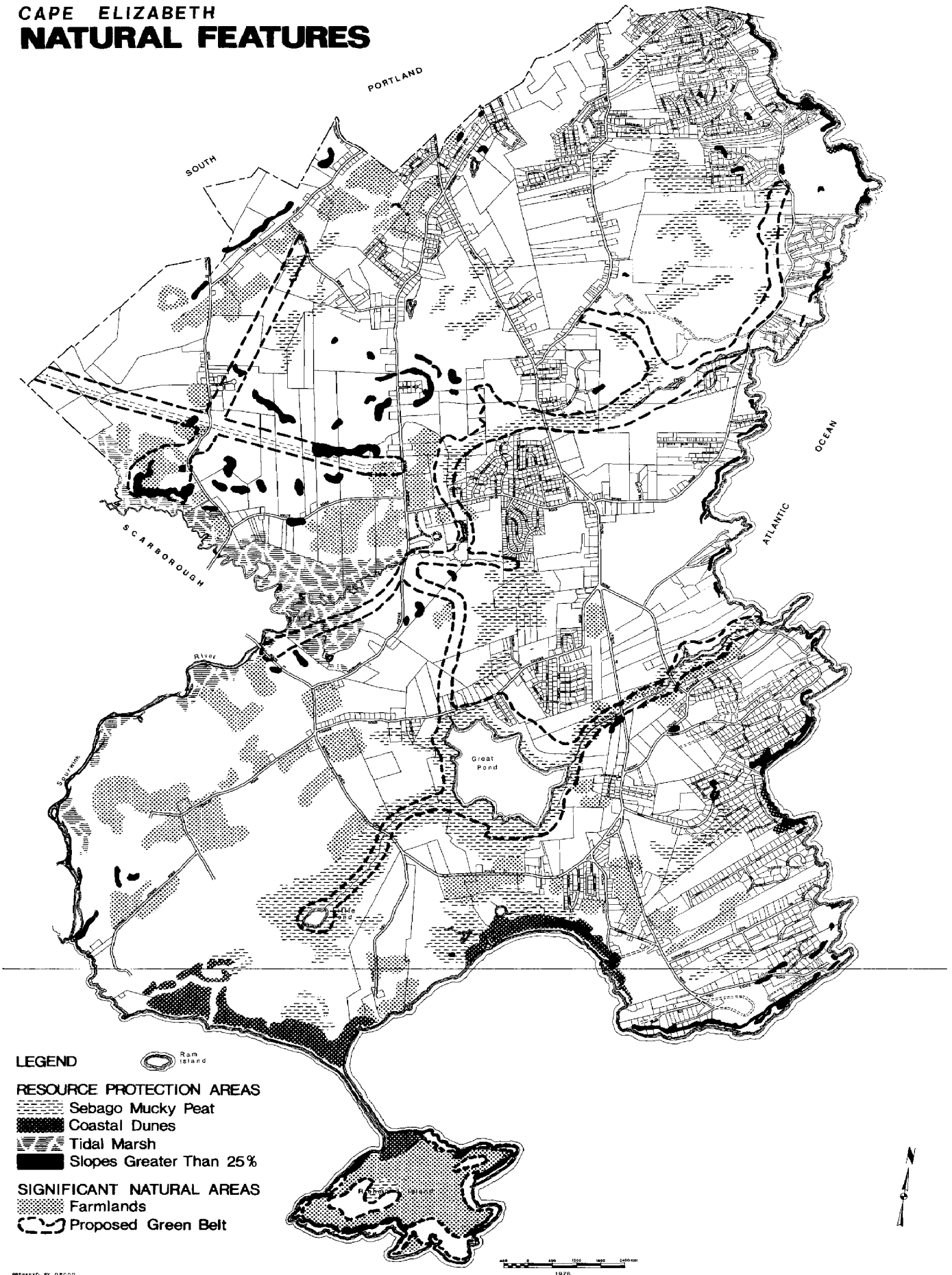
E. RURAL LANDS AREA

The use of land in the Rural Lands Area should be limited to agriculture, forestry, and very low density residential use. Public policy should clearly indicate that this area will not be sewered and that all private wastewater disposal system designs should anticipate having to serve a long life (20 years +). Possible consideration could include mandatory pumping, requirements for alternate beds, flow-reduction, mandatory inspection, and separate gray water systems. Development of subdivisions and other large housing projects should be discouraged and the retention of open land should be encouraged. To implement this strategy, the following is recommended:

- 1) The minimum lot size for single family homes on individual lots would be 2½ acres.

1. Past Trends and Future Projections, GPCOG.

CAPE ELIZABETH NATURAL FEATURES



LEGEND



RESOURCE PROTECTION AREAS

- Sebago Mucky Peat
- Coastal Dunes
- Tidal Marsh
- Slopes Greater Than 25%

SIGNIFICANT NATURAL AREAS

- Farmlands
- Proposed Green Belt

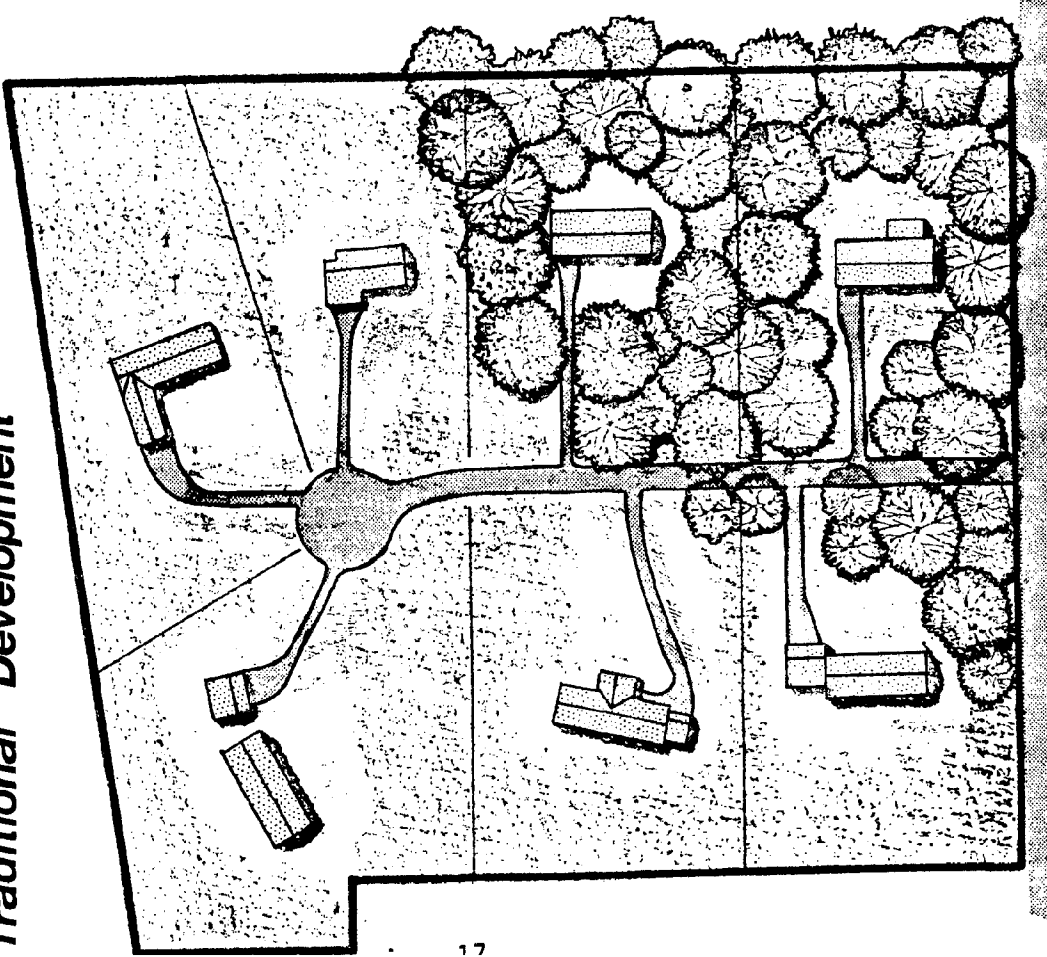


RURAL LANDS AREA

Land Use Alternatives for a 22 Acres Sites

Approx. Scale - 1 inch = 200 ft

Traditional Development



SINGLE FAMILY HOMES on INDIVIDUAL LOTS

Minimum Lot Size - 3 ACRES (7 Units)

Permanent Open Space - NONE

Feet of Road - 800'

Incentive Clustering



CLUSTER BONUS

Minimum Area Per Family - 2 ACRES

Minimum Open Space Ratio - .80

Permanent Open Space - 17+ ACRES

Feet of Road - 400'

2) To preserve agricultural land, forests and open space, performance clustering would be allowed. Under this proposal, the following standards would apply:

a. Minimum area per family - two acres

b. Minimum open space ratio - .80¹

To preserve the open space required under performance clustering, it might be necessary for the developer to utilize a communal wastewater disposal system. Such systems may utilize individual septic tanks with a common leach field. There is more than adequate engineering technology to design such systems, but the town must be certain that maintenance and repairs are fully covered in any proposed homeowners association.

F. AREAS OF LOCAL SIGNIFICANCE

Areas of local significance are those areas in Cape Elizabeth which have some natural, scenic, historic, or architectural features which make them important from a community-wide perspective. These areas would constitute an overlay district in the land use regulations, and development rights transfers from these areas to the designated growth areas would be encouraged. Conservation easements and clustering to avoid negative impacts on these areas should also be encouraged.

G. LOCAL BUSINESS DISTRICTS

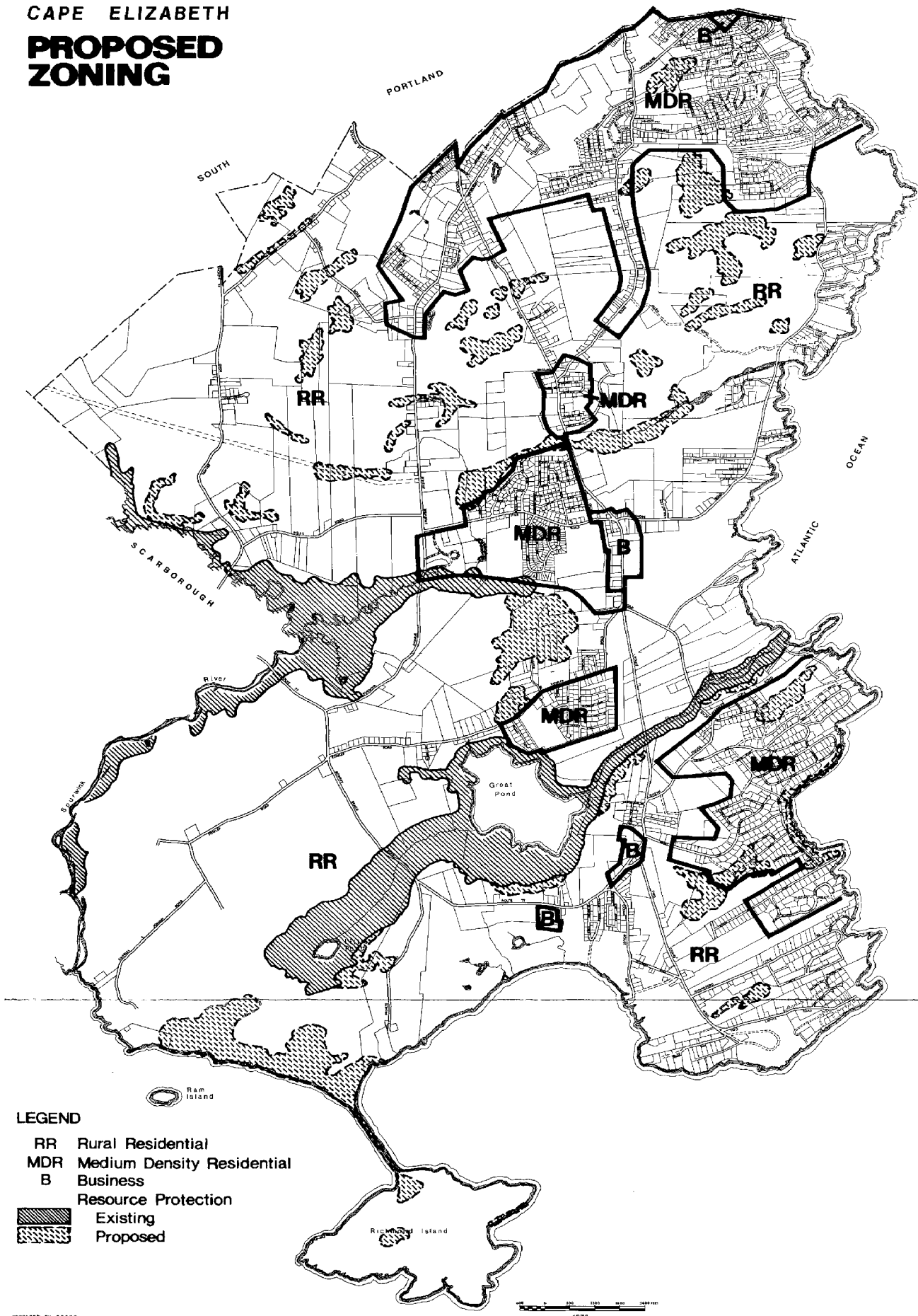
Cape Elizabeth residents generally do their major shopping in South Portland or other areas. No new business districts are recommended in the Comprehensive Plan. In fact, it is recommended that the B.B. district in the Kettle Cove area be rezoned to residential. Although there is a large vacant B.B. district adjacent to Crescent Beach State Park, little actually has occurred. The committee recommends that the Crescent Beach Inn parcel remain in local business but that remainder of the existing business zone be rezoned residential. If pressure for business development occurs in future years, expansion of the business zone should be considered. If future demand for business exceeds the area zoned for such activity, the following policy should be considered:

Future business activity should be extended from existing business districts with careful consideration given to traffic, site design and layout at the time of such rezoning request.

1 Open Space Ratio - The open space ratio is a measure of the intensity of land use. It is arrived at by dividing total amount of open space within the site by the total site area.

Open Space - Open space is land used for recreation, agriculture, resource protection, amenity, or buffers; is freely accessible to all residents of the development, except in the case of agricultural lands where access may be restricted; and is protected by the provisions of the subdivision and zoning ordinance to ensure that it remains in such uses. Open space does not include land occupied by non-recreational buildings, roads, or road rights-of-way; nor does it include the yards or lots of single or multi-family dwelling units or parking areas as required by the provisions of the zoning ordinance. Open space should be left in a natural state except in the case of recreation uses which may contain impervious surfaces.

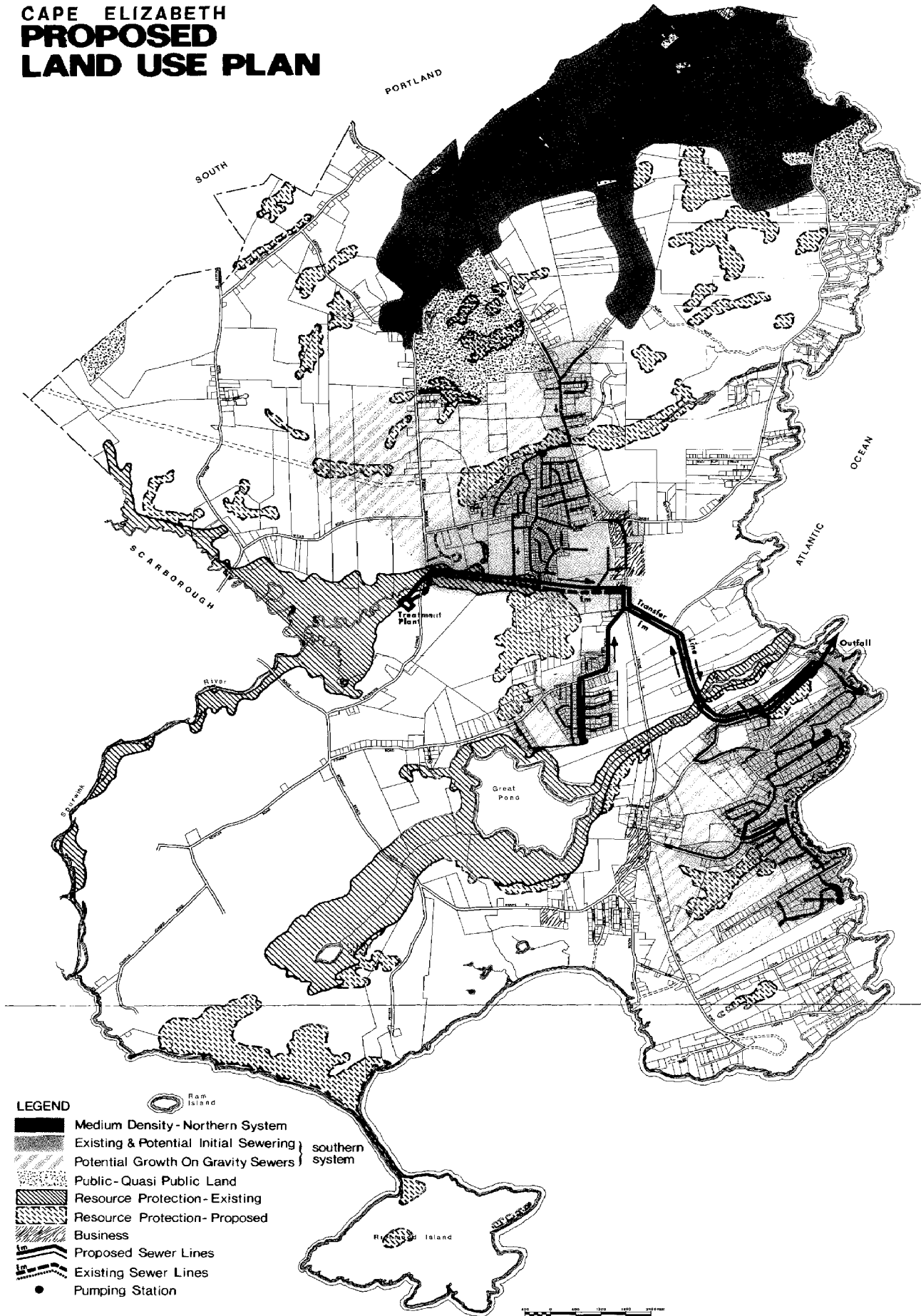
**CAPE ELIZABETH
PROPOSED
ZONING**



LEGEND

- RR Rural Residential
- MDR Medium Density Residential
- B Business
- Resource Protection
- Existing
- Proposed

CAPE ELIZABETH PROPOSED LAND USE PLAN



LEGEND

- Medium Density - Northern System
- Existing & Potential Initial Sewering } southern system
- Potential Growth On Gravity Sewers } southern system
- Public-Quasi Public Land
- Resource Protection-Existing
- Resource Protection-Proposed
- Business
- Proposed Sewer Lines
- Existing Sewer Lines
- Pumping Station

APPENDIX

Appendix A - Population

- A. Overall Growth
- B. Age Characteristics
- C. School Children
- D. School Enrollment to 1990 - Three Models
- E. Social and Economic Characteristics

A. OVERALL GROWTH (See Chart A)

Cape Elizabeth, along with Falmouth and Scarborough, was among the first communities in the Greater Portland area to develop as a "suburb", i.e., as a residential bedroom community for people who work in the urban centers.

Cape Elizabeth grew gradually between 1920 and 1950, and then spurted in the post-war period of 1950-1970. In this 20-year period the Cape was the fastest growing community in the metropolitan area. This in-migration occurred during a period in which the region as a whole experienced a net out-migration.

In the 1970's, growth in Cape Elizabeth leveled off. During this period, the region as a whole experienced a large net in-migration, but most of this growth took place in communities farther out than the Cape - Gorham, Windham, Yarmouth, Standish, etc. In-migration figures for Cape Elizabeth reflect this slowdown.

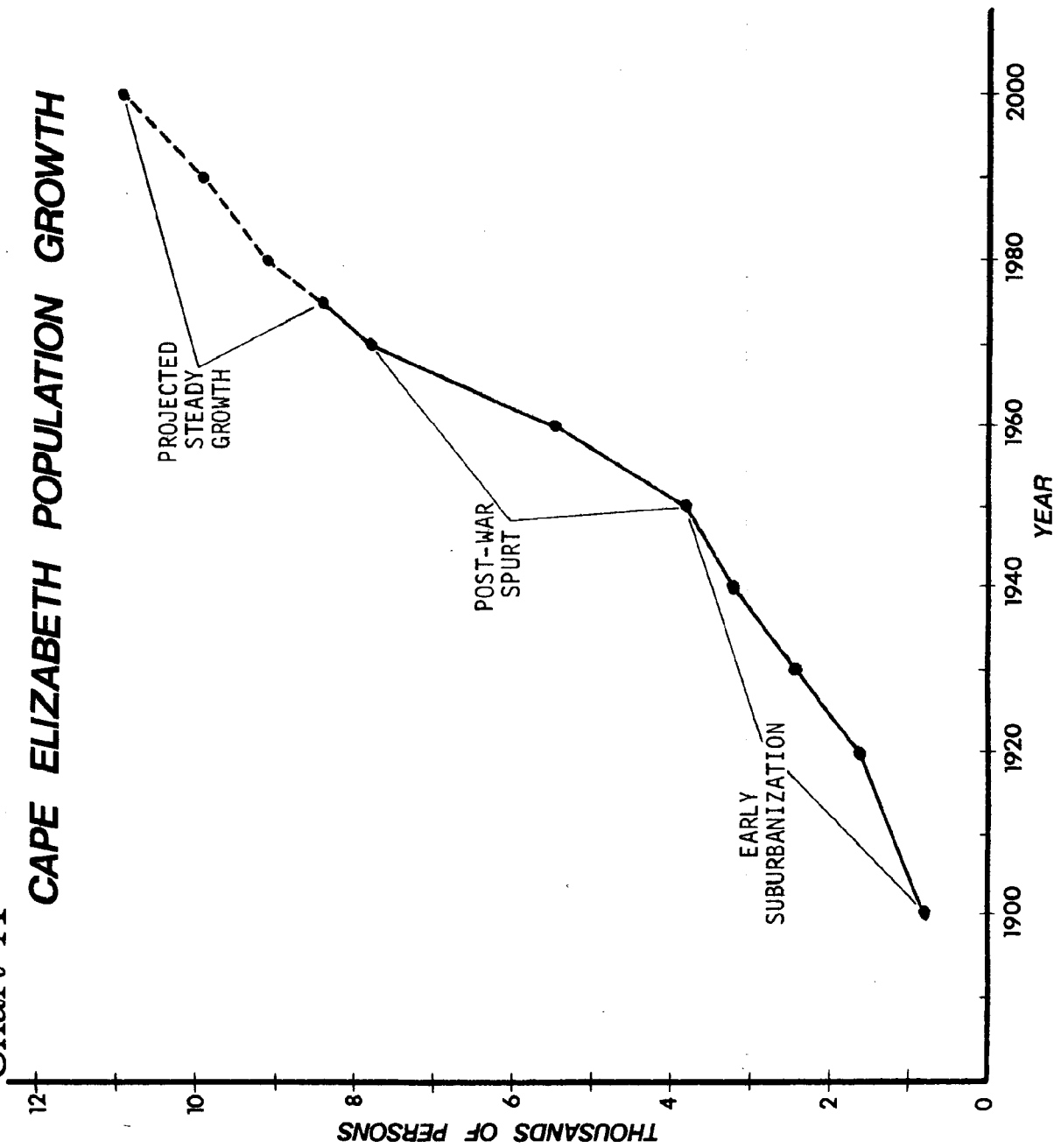
NET IN-MIGRATION, CAPE ELIZABETH

1940-1949	198
1950-1959	1149
1960-1969	1710
1970-1979	150

Greater Portland Council of Governments projections show a continued steady rate of growth in the future. As the cost of transportation continues to increase, and land use controls become more common in the outlying communities, Cape Elizabeth is expected to continue to attract residential development over the long run.

Chart A:

CAPE ELIZABETH POPULATION GROWTH



B. AGE CHARACTERISTICS (See Chart B)

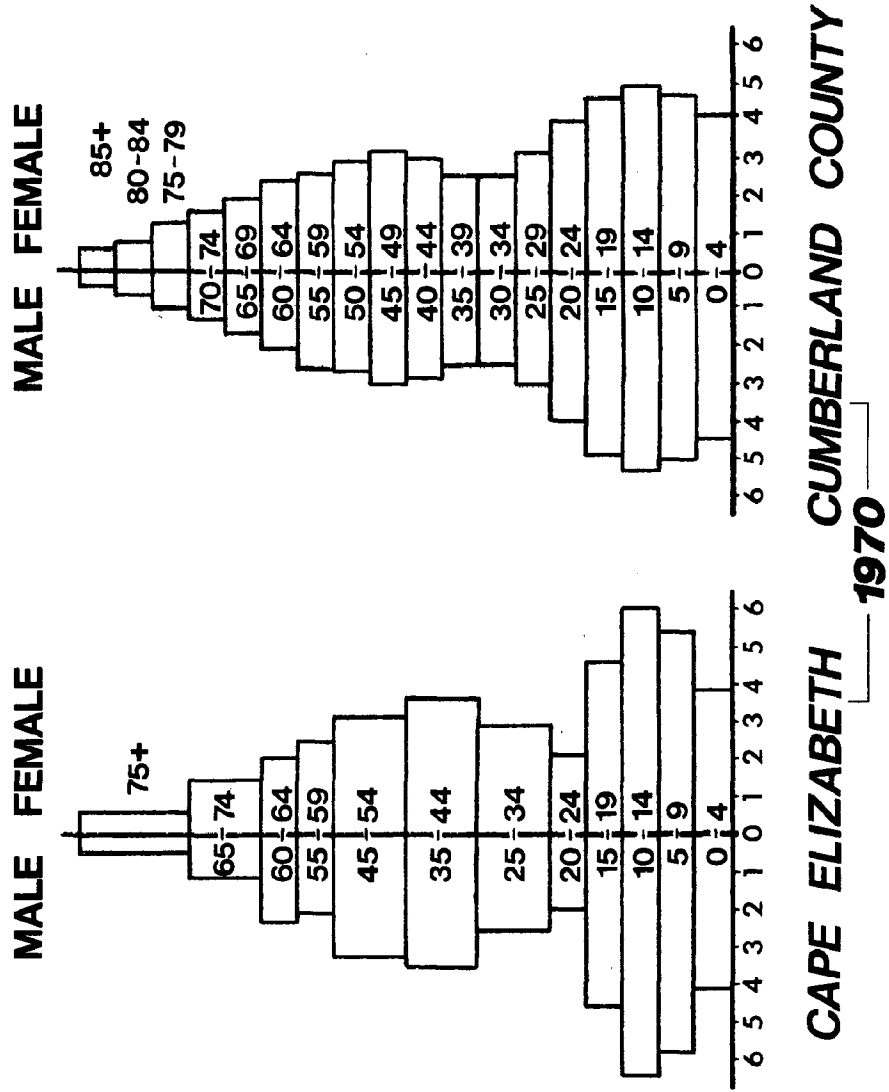
In 1970, Cape Elizabeth had proportionately more middle-aged residents than the rest of Cumberland County and proportionately fewer elderly people (75 or more) and young people (20-24). This middle-aged group represents the people who migrated to Cape Elizabeth in the post war (1950-1970) years, while the rest of the county experienced a net out-migration. With middle-aged people come children. In 1970 the Cape had a higher proportion of school-age children than the rest of the County.

Since 1970, the middle-aged character of the Cape has been reinforced by the region's in-migration. A study of license plate applications of new residents from out of state shows that Cape Elizabeth tended to get a higher proportion of in-migrants in the 35-64 age group than the rest of the region.

IN-MIGRANTS, 1975-1976

	TOTAL	16-19	20-24	25-34	35-44	45-64	65+
Cape Elizabeth number	228	8	21	87	51	52	9
percent		4%	9%	38%	22%	23%	4%
Region percent		2%	16%	47%	15%	16%	4%

**Chart B: AGE PYRAMIDS-
PROPORTION OF POPULATION BY AGE AND SEX**



C. SCHOOL CHILDREN

School children come to Cape Elizabeth from two sources:

- 1) Children born in Cape Elizabeth
- 2) Children in families migrating to the Cape

Each will be discussed in turn.

1) Births

The birth rate in Cape Elizabeth fell below that of the county in 1960 and has since remained lower. The birth rate for both the county and Cape Elizabeth have dropped by half since 1960. (See Chart C).

This declining birth rate is reflected in the declining sizes of entering classes in Cape Elizabeth schools (See Chart D).

Chart C:
BIRTH RATES - SELECTED YEARS

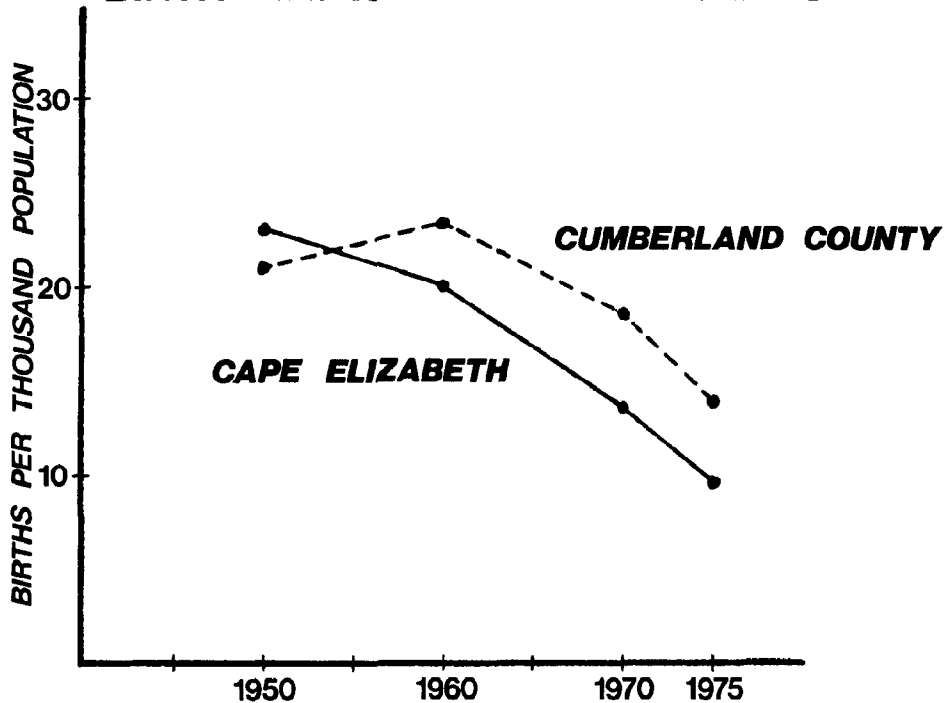
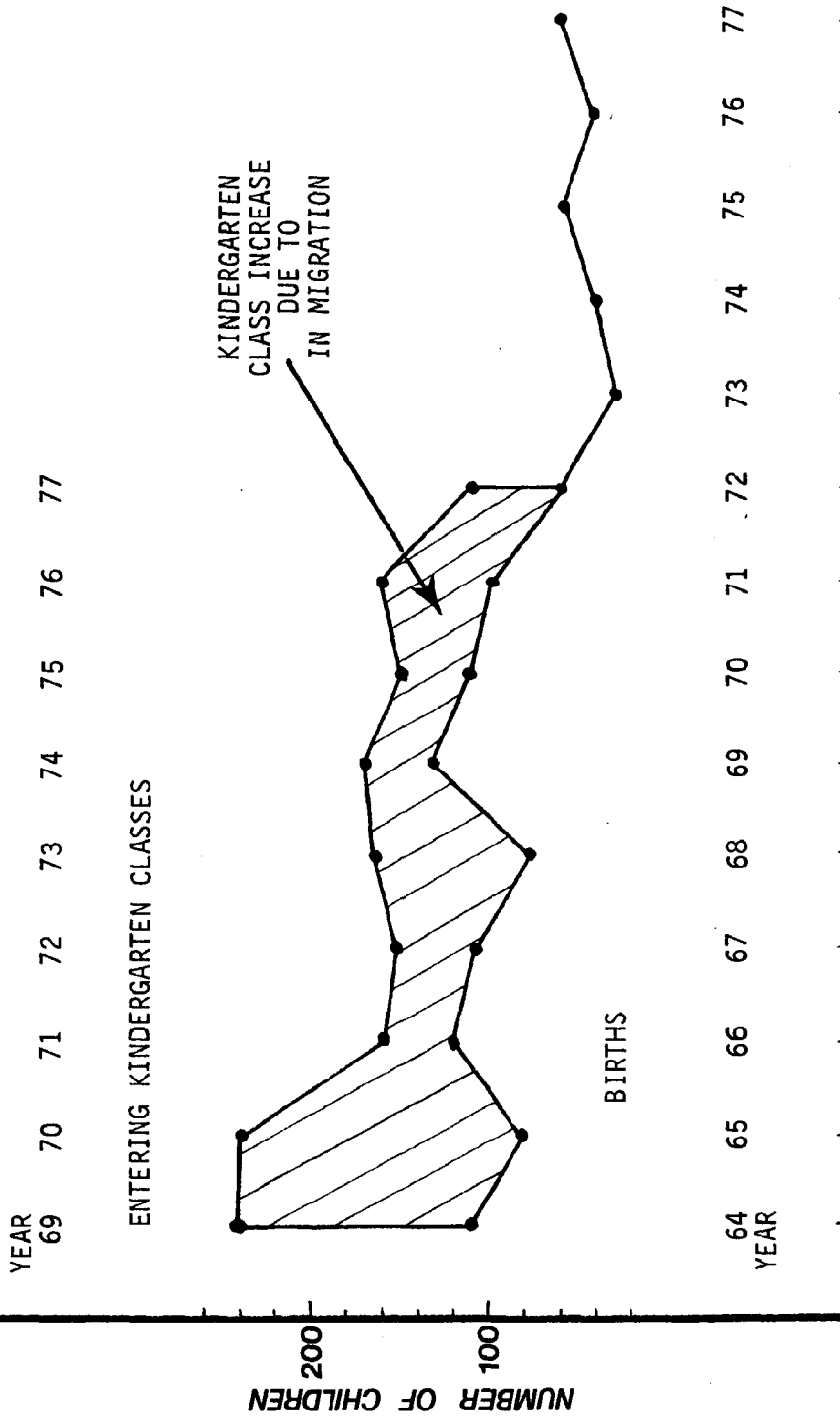


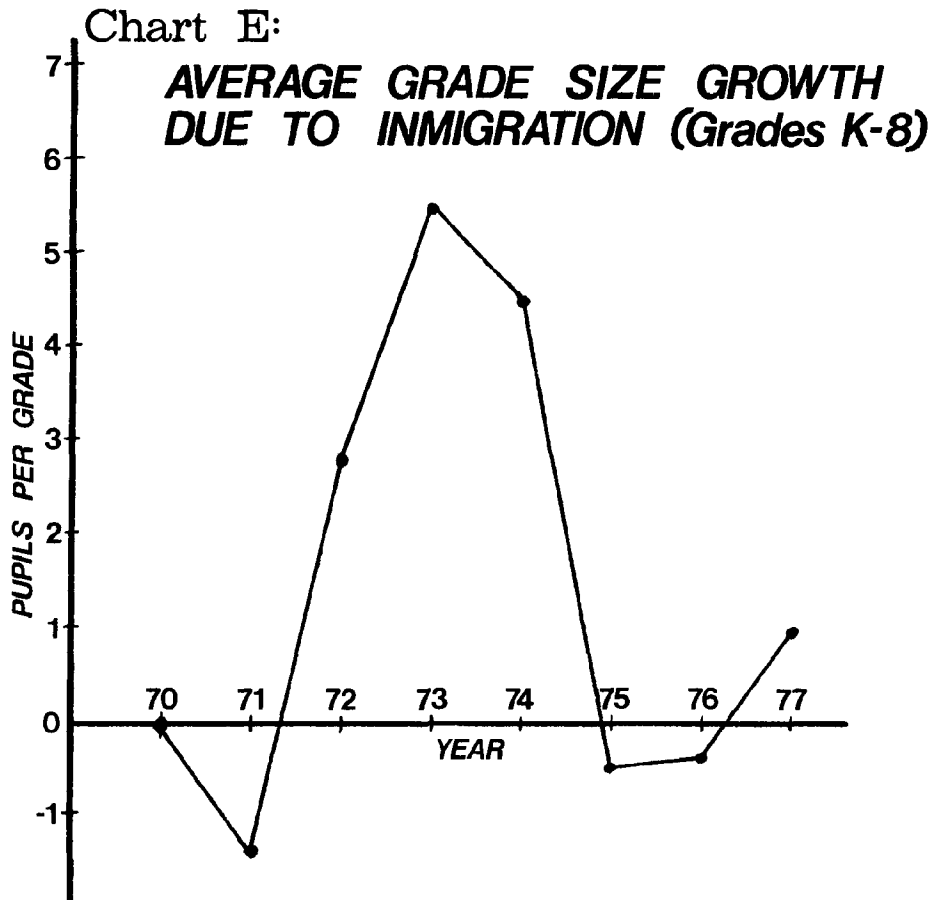
Chart D:



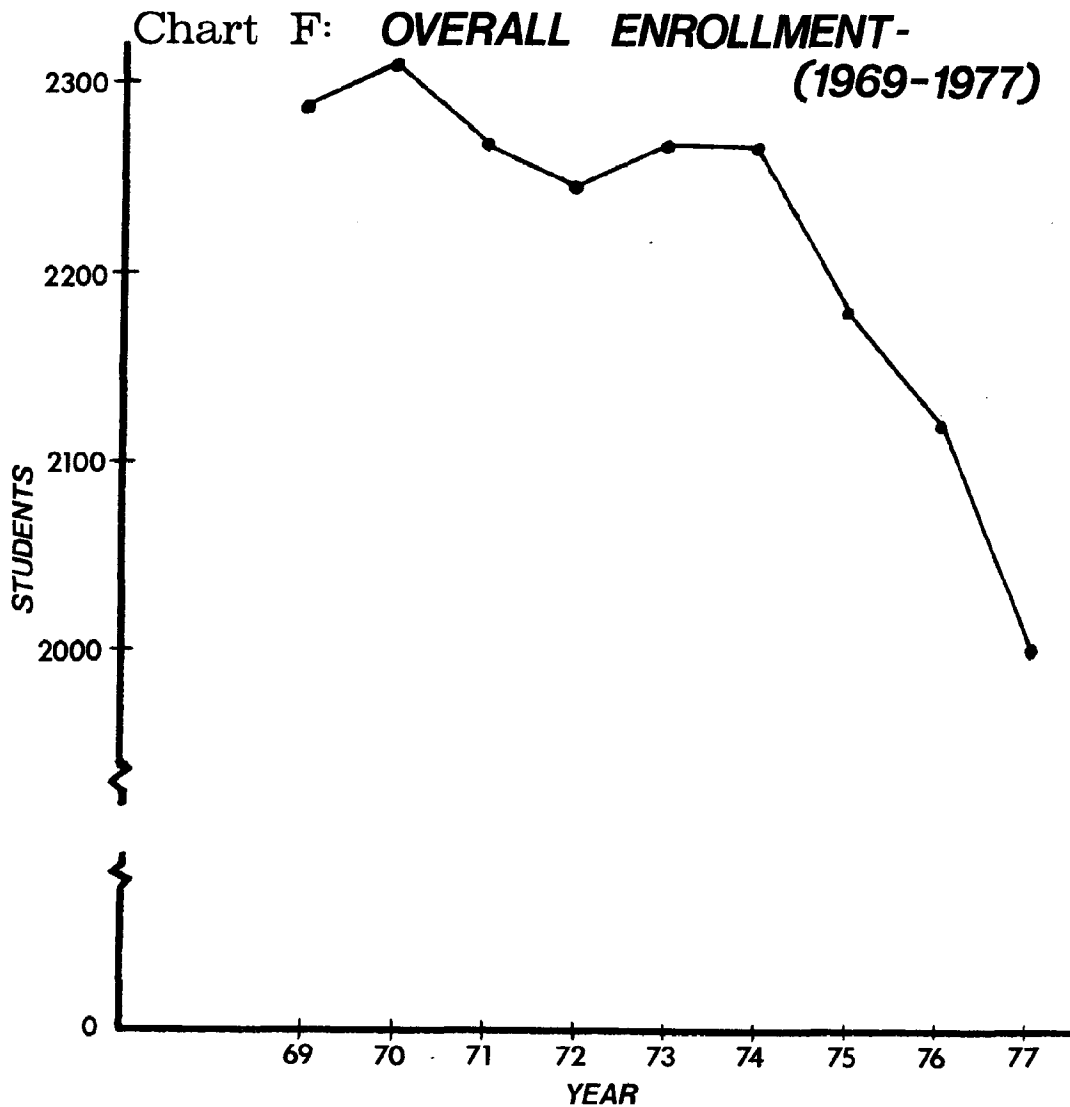
**CAPE ELIZABETH
BIRTHS AND ENTERING KINDERGARTEN CLASSES COMPARED: 1964-1977**

2) Children of In-migrants

The same chart showing declining kindergarten enrollments also shows that in-migration has contributed to entering classes in every year since 1970. This in-migration has also - in most years - contributed to the growth of existing classes in the schools (see Chart E). From 1972 to 1974, high levels of in-migration of students contributed to stabilizing school enrollments in the Cape, in the face of declining entering class sizes because of lower birth rates. This cessation of in-migration, combined with lower birth rates, contributed to a sharp drop in overall enrollment (see Chart F).



* Average grade size from 1970 to 1977 varied between roughly 150 and 175 students.



3) Conclusion

With the birth rate stabilizing, and construction in Cape Elizabeth likely to pick up in the years ahead, an eventual stabilization of the school population can be seen in the 1980's. This stabilized level should be lower than the current level, however, somewhere in the 1600-1800 student range.

The short term prospect is for a continued decline in overall enrollment until the new equilibrium is reached.

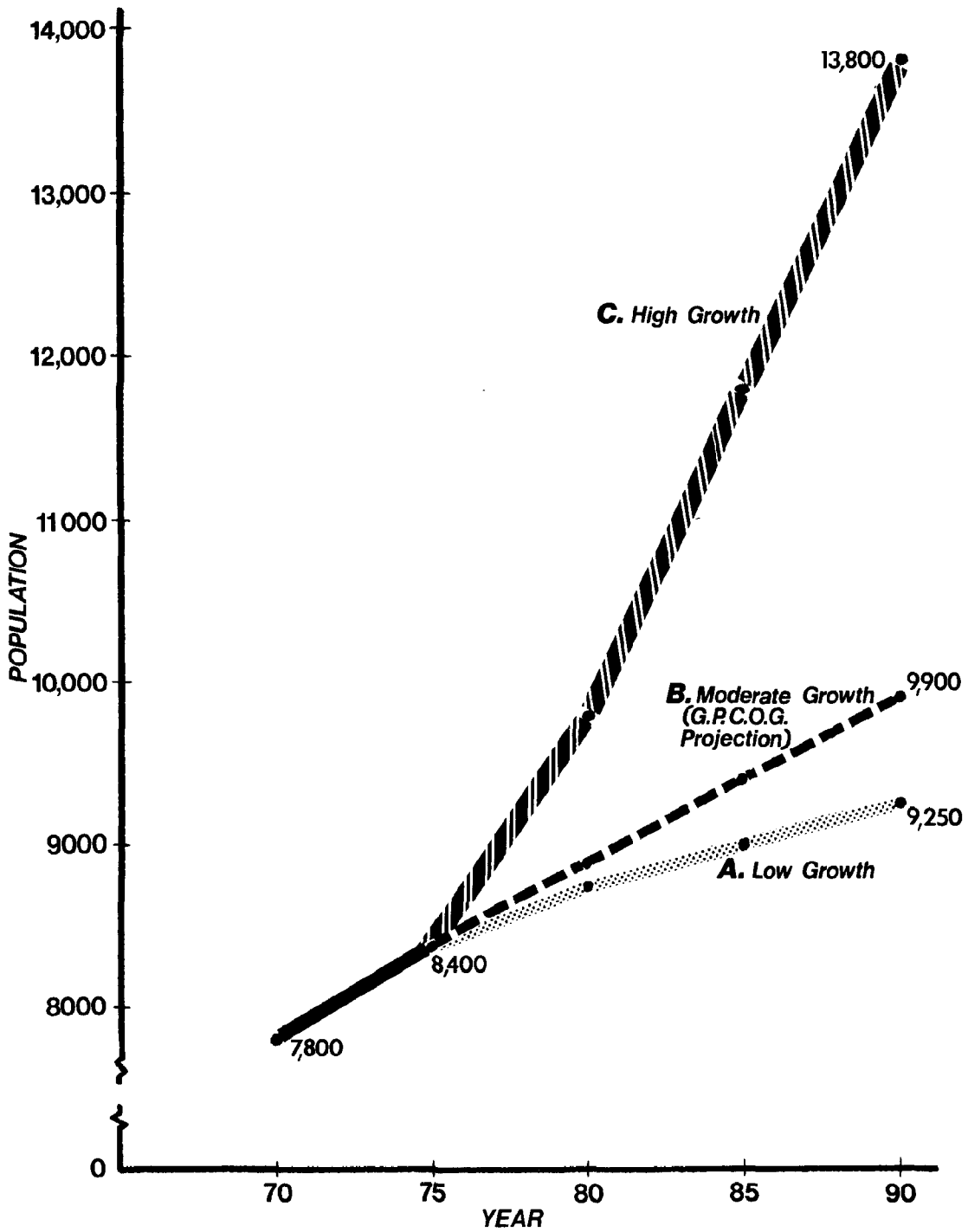


Chart G: CAPE ELIZABETH POPULATION GROWTH UNDER THREE GROWTH MODELS

D. SCHOOL ENROLLMENT TO 1990 - THREE MODELS

1. The Three Models

In response to the Committee's inquiries, three projections of school enrollment for Cape Elizabeth were prepared. Each model has the same assumptions about the birth rate (a slight increase in years ahead), and about the relationship between in-migrants and school population (a constant ratio of one new student for every five in-migrants). However, each model assumes a different level of in-migration to Cape Elizabeth.

MODEL A Low Growth - No in-migration, population growth due solely to natural increase.

MODEL B Moderate Growth - A modest level of in-migration - roughly 50 persons per year. This model is based on projections contained in Past Trends and Future Projections (GPCOG, 1977).

MODEL C High Growth - This model was designed to provide a level of growth necessary to return school enrollment to the desired level of 2100 students. Net in-migrant population in this model comes to 350 people per year.

The population and housing demand implications of these models are shown on charts G and H.

For details on how these models were constructed, see the Technical Appendix at the end of this section.

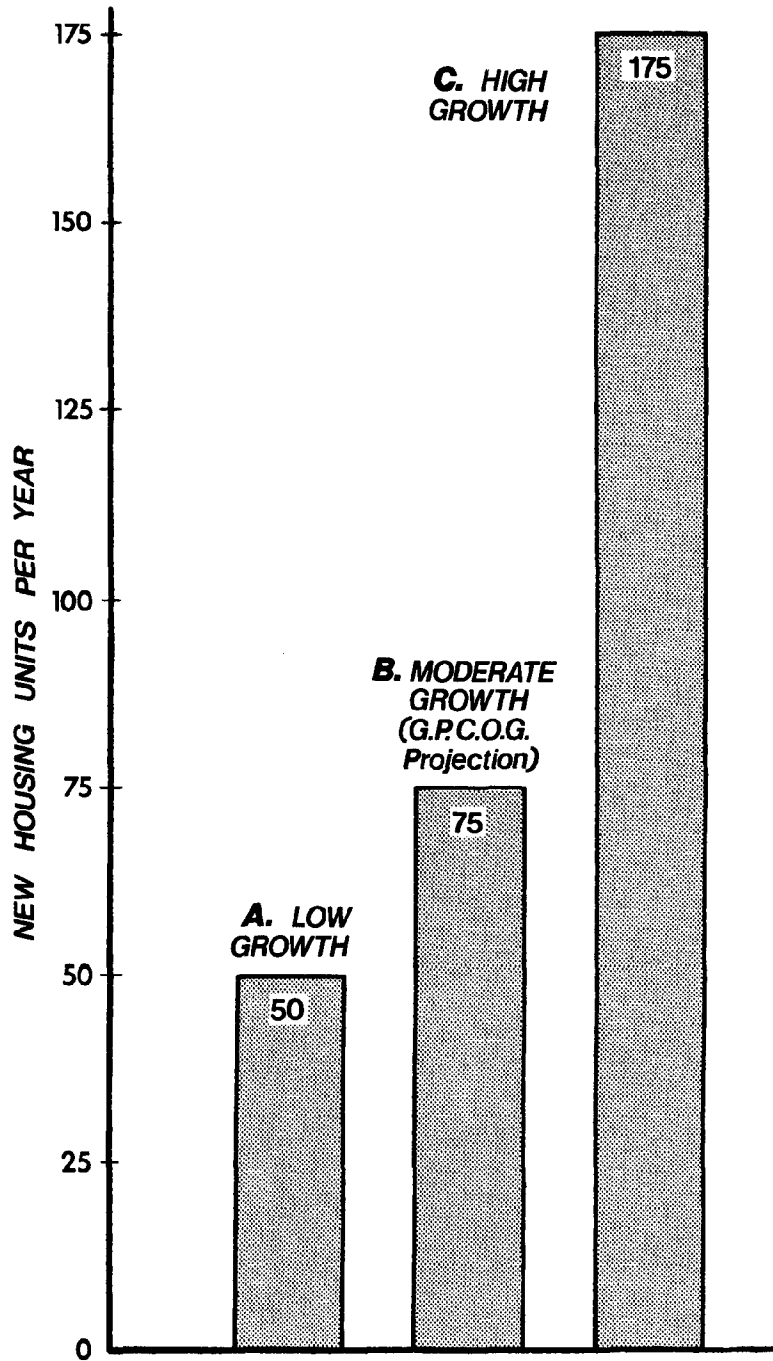
2. Findings

The results of these models are quite discouraging. To maintain school enrollment would require a growth rate that would almost double Cape Elizabeth's housing stock by 1990, a rate of growth which would seem undesirable from an environmental and local tax standpoint. Yet a low growth rate almost certainly means that school enrollment will fall almost to half its 1969 level over the next ten years. This too would mean higher taxes, a narrower curriculum, etc.

Beyond this basic finding, the models show that:

- a) No matter what level of in-migration Cape Elizabeth experiences over the next five years, school enrollment will continue to drop because of the impact of recent low birth rates. Even the high growth model of 175 units per year has the school enrollment dipping to 1850 in the 1981-1983 period.
- b) The GPCOG moderate growth projection model shows a leveling out of students at the 1350 level - much lower than the 1600-1800 level estimated earlier.
- c) A substantial rise in the birth rate would do as much for Cape Elizabeth as would new in-migration. While this is a difficult area to predict, it is unlikely that this rate will rise more than the model predicts. Too many lifestyle changes have occurred in the last 10 years to allow for the high birth rates of the 50's and early 60's (women in the work force, single living, divorces, inflation, etc.). If the birth rate doesn't rise as much as the model predicts (from 9.4 to 12 births per thousand), school enrollment will be even lower.

**Chart H:
CAPE
ELIZABETH
ANNUAL
HOUSING
DEMAND,
1978-1990
UNDER
THREE
GROWTH
MODELS**



d) With no new in-migration, school enrollment will continue dropping at a level of 100 per year until 1983 - down 800 students in eight years.

The school situation will be considered further in the housing section, since the development of a housing policy for the town will have to take this situation into account.

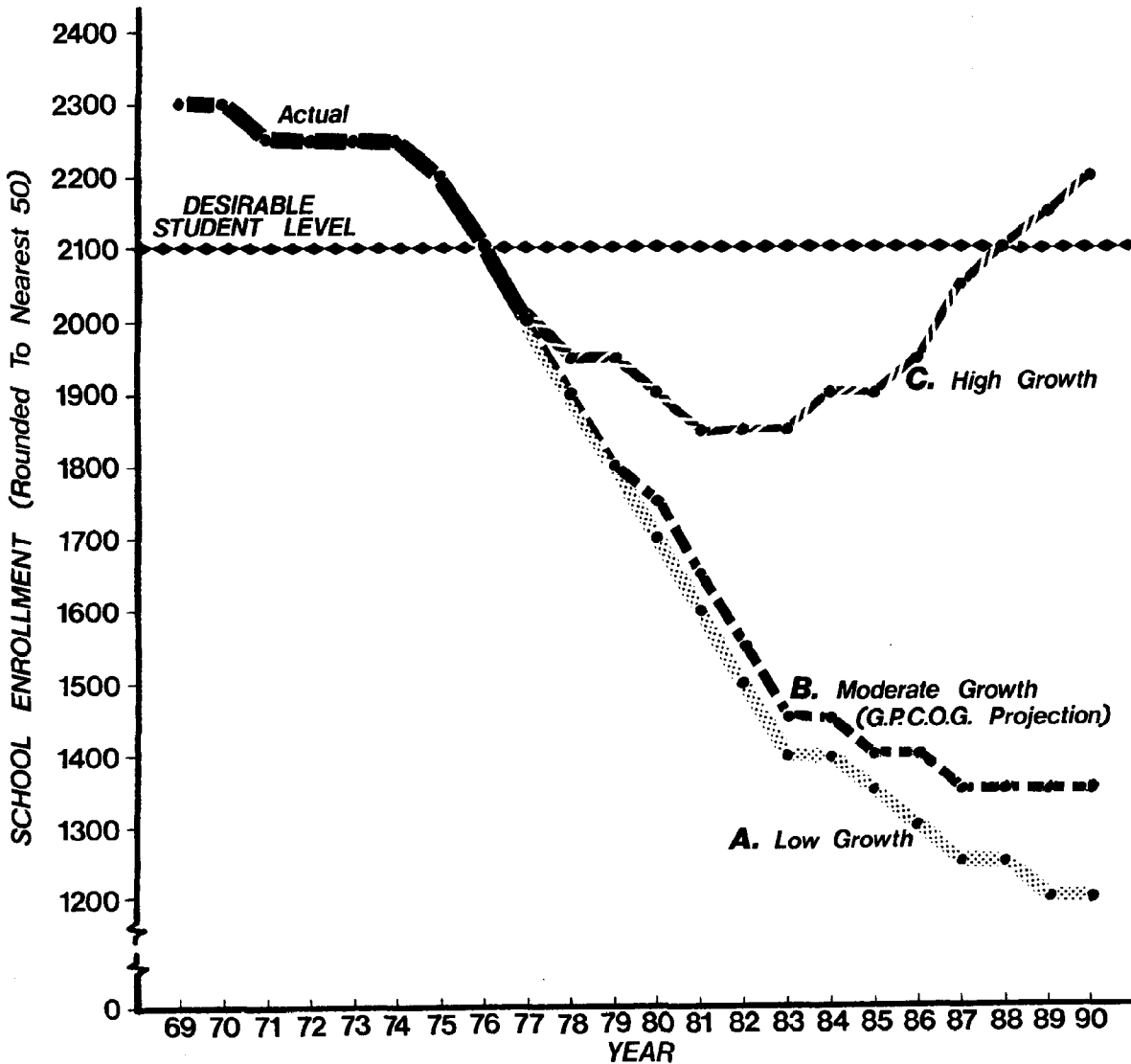


Chart I: **CAPE ELIZABETH 1978-1990**
PROJECTED SCHOOL ENROLLMENTS
UNDER THREE GROWTH MODELS

E. SOCIAL AND ECONOMIC CHARACTERISTICS

The following is a very brief survey of some of the social and economic characteristics of Cape Elizabeth's population. Most of the information is taken from the 1970 Census, which means that it is somewhat dated.

1. Cape Elizabeth has predominantly middle to upper income families (See chart J).

The attached chart compares Cape Elizabeth's income mix with the whole Portland metropolitan area in 1970.

2. Cape Elizabeth's income growth from 1950 to 1970 was faster than that of the region's (see chart K).

The 1950-1970 period was the period of Cape Elizabeth's fastest expansion. During this period the median income for the Cape rose at a correspondingly fast pace.

3. There is a very low rate of poverty in Cape Elizabeth.

This is a logical corollary to the first two statements. Since most residents of the Cape have come in the last 20 years or so, there isn't a large local elderly population in need of help. Ten percent of Cape Elizabeth's population in 1975 was over 65, in contrast to 12 percent for the region. Of these, approximately 550 elderly households, less than 50 receive public assistance of any kind - tax and rent refund, food stamps, social security income.

There are perhaps 50 families on public assistance (food stamps, AFDC) in Cape Elizabeth, and probably many more with economic difficulties from inflation or unemployment. The unemployment rate in Cape Elizabeth in 1976 was 5.9 percent, while it was 8.3 percent for the County (Annual Planning Report, Cumberland County, Maine Department of Manpower Affairs, p. 24). Since then, unemployment for the Portland region has dropped to 5 percent in April, 1978. Food stamp recipients in Cape Elizabeth have dropped off at the same time, from 58 families in 1975 to 33 families in 1977. A growing proportion of these families have a female as head of the household, with the woman either divorced or separated (42 percent of 1977 recipients).

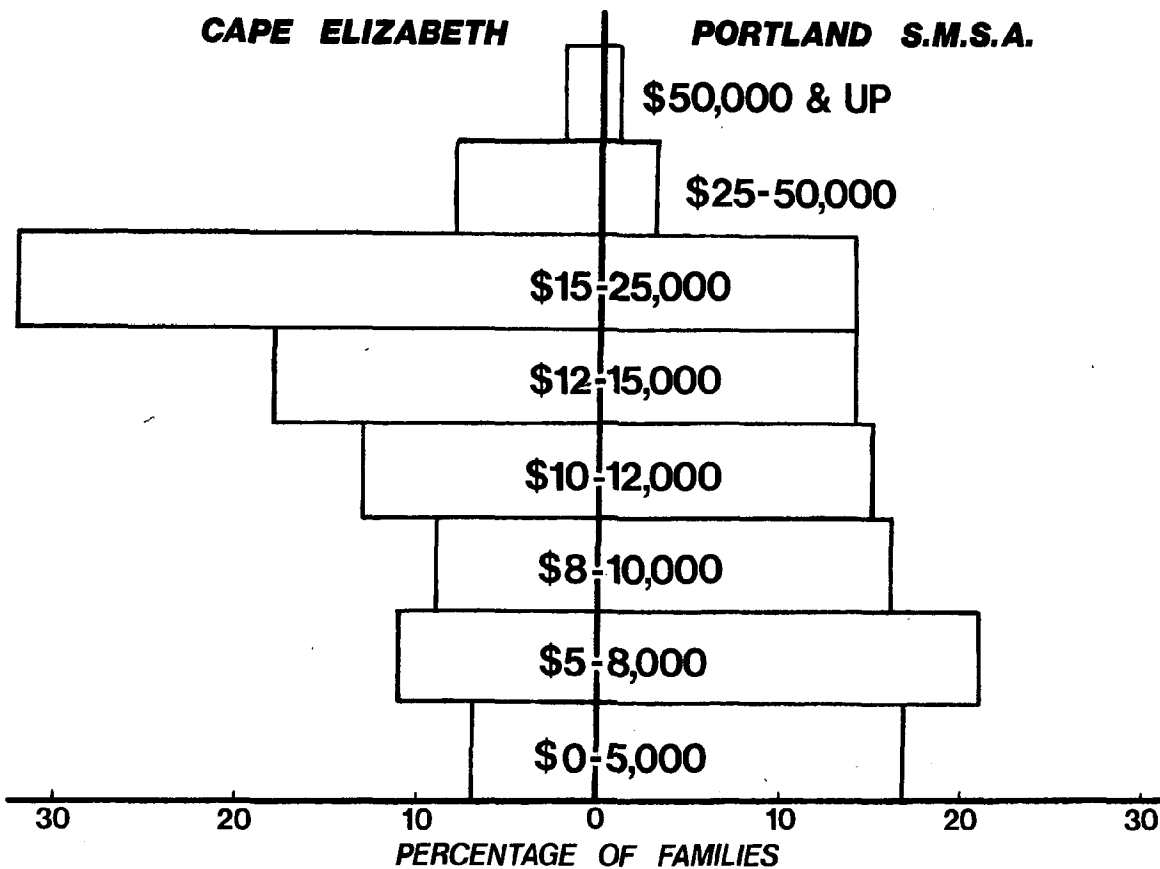
4. Cape Elizabeth residents are well educated.

In 1970, 26 percent of Cape Elizabeth residents over the age of 25 had completed four or more years of college. This is in contrast to the comparable percent for the metropolitan area in 1970 of 12 percent. This also is in contrast to the situation in Cape Elizabeth in 1950, when 15 percent of the residents over the age of 25 had college degrees.

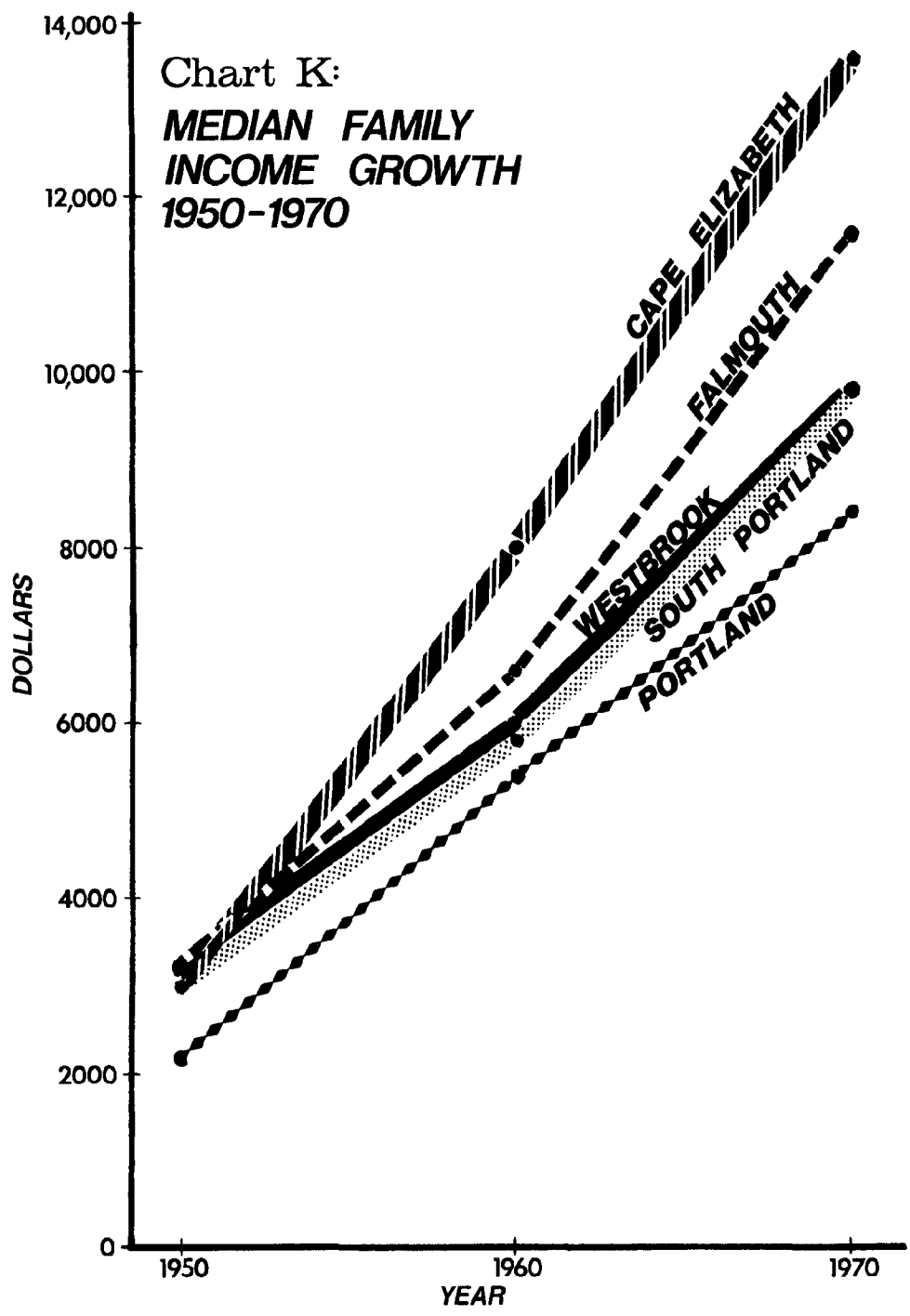
5. Women are playing a larger role in Cape Elizabeth's work force.

In 1950, one woman in five in Cape Elizabeth was in the labor force. In 1970, the number was two in five. Today, the proportion of Cape Elizabeth women who work is probably closer to one of every two.

This development represents a revolution both in the workplace and in the home. It plays a significant role in reducing birth rates, increasing the need for day care, and increasing the need for part time jobs, etc.



**Chart J: 1970 FAMILY INCOME DISTRIBUTION,
CAPE ELIZABETH AND REGION COMPARED**



6. Cape Elizabeth's work force is predominantly white collar.

Eighty percent of Cape Elizabeth's work force is engaged in professional-managerial jobs and sales-service-clerical jobs. This predominance is true for both men and women. The trend towards white collar jobs has increased in the Cape between 1950 and 1970.

Proportion of workers by occupation, 1950 and 1970, Cape Elizabeth.

	Male		Female	
	1950	1970	1950	1970
Professional-managerial	31	44	23	37
Sales-service-clerical	25	34	52	52
Craftsmen-operatives	22	16	4	6
Farm workers	6	1	-	-
Other (laborers, domestic work, etc.)	12	5	21	5
Total employed	958	3060	254	1102

7. Most Cape Elizabeth residents work outside of the community.

Almost half of Cape Elizabeth workers commute to Portland to work. The second largest group works in South Portland. The next largest group works in the Scarborough-Cape Elizabeth area.

Place of Work, 1970, Cape Elizabeth workers

Portland	1459	48%
So. Portland	615	20%
Cape Elizabeth, Gorham, and Scarborough	496	16%
Other towns in SMSA	70	3%
Other towns outside SMSA	201	7%
Not given	184	6%

8. Most Cape Elizabeth workers commute by car.

Four fifths of Cape Elizabeth's workers reach their job by car.

Means of transport to work, 1970, Cape Elizabeth

Of 3025 total workers

2347 drove	78%
236 carpoled	8%
58 took the bus	2%
7 took a train ?	-
124 walked	4%
100 worked at home	3%
120 got there some other way	4%

The above facts - that most Cape residents work in Portland and South Portland, and that most commute by car - would suggest that if the town were to develop an energy policy, one of the first priority issues would be how to encourage mass transit use and carpooling.

TECHNICAL APPENDIX
ON SCHOOL PROJECTIONS

DESCRIPTION OF MODELS

(A) Low Growth

Assumes no net in-migration to Cape Elizabeth between 1978 and 1990.

(B) Moderate Growth

Assumes a modest level of net in-migration to Cape Elizabeth between 1978 and 1990 - roughly 50 persons per year. This model is based on projections of Cape Elizabeth's population contained in Past Trends and Future Projections, GPCOG, 1977.

(C) High Growth

This model provides a level of growth necessary to return school enrollment to the desirable level of 2100 students. Net in-migrant population in this model comes to 350 people per year.

ASSUMPTIONS OF SCHOOL ENROLLMENT PROJECTION MODEL

1. School enrollment for a given year (SE) is equal to the school enrollment of the previous year (SE-1) less the graduating class (G), plus the children aged five born in Cape Elizabeth (B), plus children of in-migrating families (M).

$$SE = (SE-1) - (G) + (B) + (M)$$

The graduating class for each year is taken from 1977 enrollments (Grade 12 is class of 1977, Grade 11 is class of 1978, etc.). Children aged five are determined from births which have (or will) take place in Cape Elizabeth five years prior to the projected year. In-migrant children are adjusted, according to assumptions of population growth.

2. The birth rate is projected to rise gradually between 1978 and 1983 to 12 births per 1000 population (the 1975 birth rate in Cape Elizabeth was 9.4 births per 1000).
3. It is assumed that 50 percent of the projected population growth in Cape Elizabeth between 1975 and 1990, in the GPCOG projections (moderate growth), is due to natural increase. This is the comparable figure for the region. (See Past Trends and Future Projections, pp. 19, 27).
4. It is assumed that the ratio of school enrollment growth to in-migrant population in Cape Elizabeth from 1978-1990, will be the same as the region's ratio of school enrollment to population in 1975 (40,661 students/188,900 population = .2 students/person - see Growth in the Cumberland Housing Market, 1970-1975, pp. 41-42).

ASSUMPTIONS OF HOUSING PROJECTION MODEL

(For detailed discussions of each of these assumptions, see Past Trends and Future Projections, Section 2 Housing)

1. That household size in Cape Elizabeth will decrease by 14 percent between 1975 and 1990. This is a reflection of lifestyle changes - more elderly living on their own, more singles living alone, more couples without children, children leaving home earlier, lower birth rates generally.
2. A vacancy rate of 2 percent.
3. A need to replace stock lost to fires, demolition, etc. Estimated to be only 1 percent of Cape Elizabeth's current housing stock over the next 13 years.

MODEL A

LOW GROWTH

Year	School Enrollment	Graduating Class	Population	Birth Rate	Births	In-migrant School Children	In-migrant Population
77	2002		8600				
78	1882	185	8650		65	0	0
79	1799	153	8700		70	0	0
80	1700	178	8750		79	0	0
81	1590	181	8800		71	0	0
82	1502	170	8850		82	0	0
83	1406	183	8900	.01	87	0	0
84	1375	127	8950	.011	96	0	0
85	1331	149	9000	.012	105	0	0
86	1300	137	9050	.012	106	0	0
87	1267	140	9100	.012	107	0	0
88	1238	136	9150	.012	107	0	0
89	1202	144	9200	.012	108	0	0
90	1207	104	9250	.012	109	0	0

MODEL B
MODERATE GROWTH

Year	School Enrollment	Graduating Class	Population	Birth Rate	Births	In-migrant School Children	In-migrant Population
77	2002		8600				
78	1892	185	8700		65	10	50
79	1819	153	8800		70	10	50
80	1730	178	8900		79	10	50
81	1630	181	9000		71	10	50
82	1552	170	9100		82	10	50
83	1466	183	9200	.01	87	10	50
84	1446	127	9300	.011	97	10	50
85	1414	149	9400	.012	107	10	50
86	1395	137	9500	.012	108	10	50
87	1374	140	9600	.012	109	10	50
88	1358	136	9700	.012	110	10	50
89	1336	144	9800	.012	112	10	50
90	1355	104	9900	.012	113	10	50

MODEL C
HIGH GROWTH

Year	School Enrollment	Graduating Class	Population	Birth Rate	Births	In-migrant School Children	In-migrant Population
77	2002		8600				
78	1952	185	9000		65	70	350
79	1939	153	9400		70	70	350
80	1910	178	9800		79	70	350
81	1870	181	10200		71	70	350
82	1852	170	10600		82	70	350
83	1829	183	11000	.01	90	70	350
84	1875	127	11400	.011	103	70	350
85	1914	149	11800	.012	118	70	350
86	1969	137	12200	.012	122	70	350
87	2026	140	12600	.012	127	70	350
88	2092	136	13000	.012	132	70	350
89	2155	144	13400	.012	137	70	350
90	2263	104	13800	.012	142	70	350

HOUSING CONSTRUCTION NEEDED

	A	B	C
A. Population, 1990	9250	9900	13800
B. Household size, 1990	2.82	2.82	2.82
C. Total Units (A divided by B)	3280	3511	4894
D. +2% vacancy (C x 1.02)	3346	3581	4992
E. Plus replacement (1% of 75) (G x .01)	26	26	26
F. Total need	3372	3607	5018
G. 1975 units	2564	2564	2564
H. 76-90 demand (F - G)	808	1043	2454
I. 76-77 permits	93	93	93
J. 78-90 demand (H - I)	715	960	2361
Annual demand (J divided by 13)	55	74	182
K. Rounded	50	75	175

Appendix B - Housing

- A. Introduction
- B. The Housing Stock
- C. The Cost of Housing
- D. The School Enrollment Issue
- E. The Issue of Diversity

A. INTRODUCTION

Cape Elizabeth is primarily a residential community. There is little commercial or industrial development. The major use of developed land is for housing (1900 acres, or 19 percent of Cape's land area). This residential predominance is projected to continue until the year 2000, when 3200 acres - or a third of the town's land - will be occupied by housing (see Past Trends and Future Projections, p. 69).

In this situation, the major questions to be addressed in the Comprehensive Plan invariably involve housing policy. Tax goals, school enrollment goals, social goals, environmental goals, civic goals, all come back at one point or another to housing issues. How much development should be allowed? Where? At what rate? At what cost? What type? There are different answers to each of these questions from the points of view of the Cape's schools, social make-up, environment, etc.

These questions can only finally be resolved at the end of the comprehensive planning process, after all the relevant factors have been reviewed. In this section, two of these factors will be reviewed: the school situation, and the social make-up of the community.

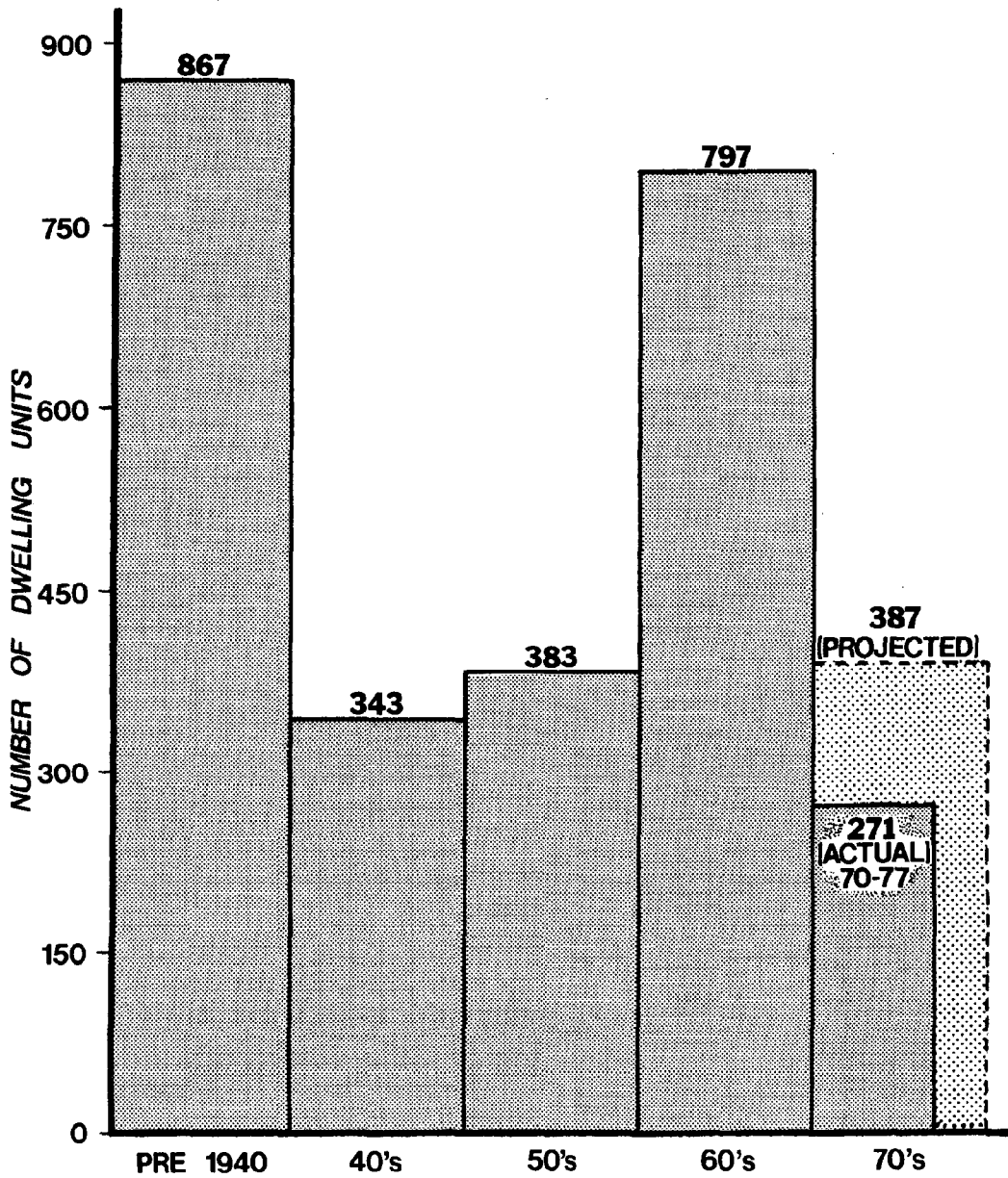


Chart L: AGE OF CAPE ELIZABETH HOUSING (Year-round Housing Only)

B. THE HOUSING STOCK

As of January 1, 1978, there were 2,739 housing units in Cape Elizabeth. Of these, 2,456 were year-round, single-family homes; 190 were apartments or two-family homes; 91 were seasonal dwellings; and two were mobile homes.

Most of the housing is of recent origin - less than 25 years old. One third of the housing is over 35 years old, built before 1940. (See Chart L).

Because most of the housing is new, the stock in Cape Elizabeth is in very good condition. Less than 1 percent of the year-round stock is deteriorated or dilapidated (depreciated 60 percent or more on the tax cards in 1975).

This shows an improvement over past census and windshield surveys. It is a reflection of private housing rehabilitation efforts on the part of homeowners in the Cape.

Housing construction has tapered off in Cape Elizabeth since 1966, when 106 housing units were authorized by permit (see Chart M). Over the last ten years, construction has hovered around the 50-unit-per-year level, sometimes dropping off as low as 20 units. GPCOG projections point to a probable demand of 75 units per year in Cape Elizabeth over the next 12 years.

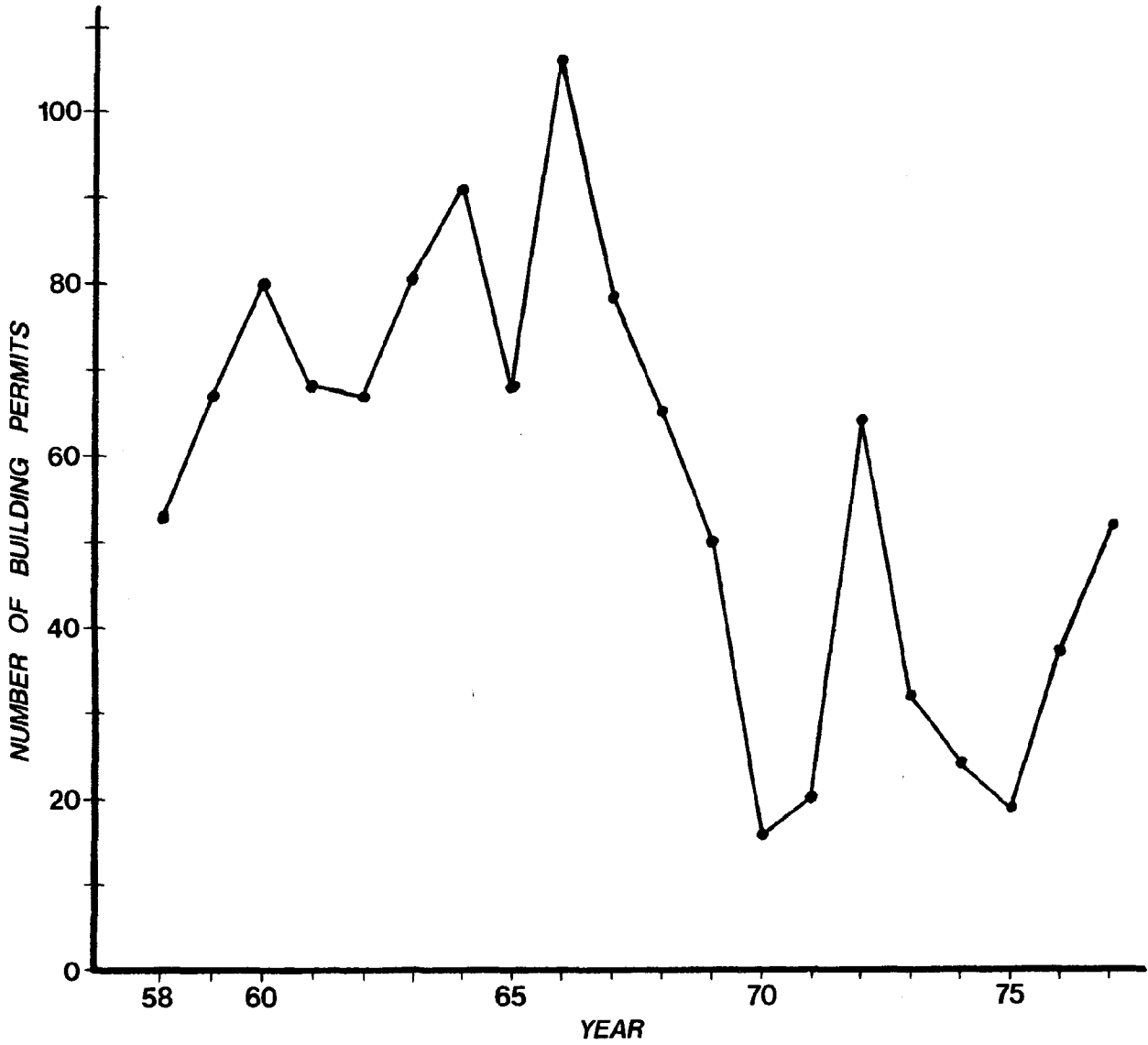


Chart M: **CAPE ELIZABETH BUILDING PERMITS**
1958 - 1977

C. THE COST OF HOUSING

Substandard housing is not the primary housing problem facing Cape Elizabeth or the region, as it once was. It has been replaced by the problem of housing inflation. Inflation in the past several years has tended to be most severe in the basic necessities of life: food, shelter, health care, transportation. These elements have tended to have a higher inflation rate than the overall inflation rate. For example, the cost of a single family home in the region has gone up roughly at the rate of 10 percent a year in the region since 1970, well above the overall annual inflation rate of 6 percent.

The cost of housing in Cape Elizabeth has not been an exception to this trend. The median sale price of a home in Cape Elizabeth in 1970 was \$27,100. In 1977 the median sale was \$46,000, an increase of 70 percent over seven years. The problem in Cape Elizabeth is accentuated by two factors:

- 1) A relatively high base price of housing in 1970 from which the inflation has taken place. By contrast, the region's median sale in 1970 was \$21,200; in 1977 it was \$37,000. (Housing 1976-1977, GPCOG, 1978).
- 2) A lack of availability of less expensive types of housing in Cape Elizabeth: apartments, mobile homes, subsidized housing (see chart below).

Housing Stock by Type, Proportion

	<u>Cape Elizabeth</u>	<u>Region</u>
Mobile homes, 1975	0%	3%
Subsidized housing, 1975	0%	9%
Multi-family, 1977	7%	39%

Source: GPCOG Land Use Monitoring System

Another consequence of a predominance of single-family housing in a community is a relatively low rate of turnover. This fact, coupled with cost and type of housing in the Cape, means that Cape Elizabeth is a relatively inaccessible community for housing for the average family.

A family can move to Cape Elizabeth by:

- 1) buying a new house;
- 2) buying an existing house;
- 3) buying a condominium; or
- 4) renting an apartment.

Most of these are expensive options. New homes in Cape Elizabeth can be purchased for as low as \$45,000, for an unfinished house on a small lot. Most new housing has gone into existing subdivisions and rural areas. This housing usually costs between \$50,000 and \$60,000. There are a limited number of new condominiums available

at \$30,000 plus, and subsidized elderly apartments available (rent scaled to income). Existing homes, as has been stated, sell on average for \$46,000. There are only a limited number of homes available for under \$35,000. The few rents available are high, in the \$250 to \$270 a month range.

The above picture was put together by interviews with the building inspector, builders, and from federal and local surveys. The only other community examined in this depth recently in the region has been Gorham, in research done for a 1978 Housing Assistance Plan. A comparison between costs in these two suburban communities is instructive.

	<u>Gorham</u>	<u>Cape Elizabeth</u>
A. <u>Proportion of housing available through turnover each year (number of units)</u>	12% (350)	5% (125)
B. <u>Of these units, proportion available to families with incomes</u>		
<u>under \$12,000</u>	44%	11%
<u>under \$20,000</u>	83%	36%

Sources: Gorham 1978 Housing Assistance Plan, pp. 8-9. See Technical Appendix methodology in Gorham and Cape Elizabeth.

The chart shows that few units are available in Cape Elizabeth each year for new families, and of these, fewer still are affordable for the average family. Two thirds of Cape Elizabeth's housing requires an annual income of \$20,000 to afford, in contrast to only a sixth of Gorham's housing.

The fact that Cape Elizabeth's housing is so expensive and exclusive has a number of implications. One is that the community has a sizeable and stable residential property tax base. Another is that the community is relatively homogeneous in terms of social class and income, as the section on social characteristics indicated. This last point will be explored further in part E of this section, "The Issue of Diversity."

D. THE SCHOOL ENROLLMENT ISSUE

In his memo to Mr. Fisher, of June 6, 1978, Dr. Thurlow, the Superintendent of Schools, pointed out that:

"An important consideration to note is the inability of any school system to sustain a broad based educational experience once their total enrollment falls below 21-2200."

The three projection models developed earlier show that, in the absence of a significant rise in the birth rate or in the rate of immigration, the school enrollment level in Cape Elizabeth will fall far short of the desired level.

The Comprehensive Plan Committee can do nothing about the birth rate, and is constrained from encouraging new housing development and immigration by environmental considerations. Within the limits of the probable housing growth rate, however, there are other housing factors which become important.

Research, which took place in New Jersey in the early 1970's, indicated that certain types of housing were more likely to attract school children than others. The study looked at four types of housing - garden apartment, high-rise apartment, townhouse, and single-family home (priced under \$30,000). It looked at each of these types of dwellings by bedroom size, relative cost, development size, development age, location, and unique development features. The basic findings of the study were two:

1. Single-family homes and townhouses tended to be more attractive to families with children than did garden or high-rise apartments.
2. The more bedrooms in a dwelling, the higher the average family size.

The table below shows the school children multipliers for the three types of housing relevant to Cape Elizabeth.

The table indicates that a 4-bedroom, single-family home or townhouse has, on the average, one school child. A one-bedroom, garden apartment, by contrast, only has a one in 20 probability of having a school-child.

PUBLIC SCHOOL ATTENDEES PER DWELLING UNIT IN N.J.

	K	GR.	H.S.	TOTAL
<u>GARDEN</u>				
1 bedroom (br)	.005	.024	.017	.046
2 br	.032	.250	.062	.344
<u>TOWNHOUSES</u>				
2 br	.029	.134	.057	.220
3 br	.097	.450	.108	.655
4 br	.125	.712	.189	1.026
<u>SINGLE-FAMILY HOME</u> (moderately priced - under \$30,000 in early 1970's)				
3 br	.083	.408	.135	.626
4 br	.152	.969	.172	1.293

Source: Methods of Housing Analysis (1977), p. 143, James W. Hughes, Rutgers University Press.

Since 1970, household sizes and school enrollments have dropped throughout the nation. It is projected that these reductions will be even more severe in the years ahead. Cape Elizabeth is not atypical in this regard.

Cape Elizabeth, public school multipliers

	<u>households</u>	<u>school enrollment</u>	<u>ratio of students to households</u>
1970	2280	2311	1.01
1977	2733	2002	.733
% change, 70-77	+20%	-13%	-27%
GPCOG projection, 1990 (Model B)	3511	1355	.386
Projected % change, 78-90	+28%	-32%	-54%

Because of this change, it is likely that the New Jersey multipliers shown in the table on the previous page are now considerably lower than they were at the time of the survey, and will continue to decrease in the near future.

But even when this is taken into account, the fact remains that certain types of housing growth are far more likely to have school children than other types.

Cape Elizabeth's zoning currently favors single-family home development, which is a type of housing with high school children multipliers. It says nothing about bedroom sizes, which appear to be an even more critical factor in influencing school children probabilities. In addition, the high cost of housing in Cape Elizabeth may invalidate some of the New Jersey findings on single-family homes. The New Jersey study is based on single family homes valued under \$30,000. It is probably that more expensive housing tends to attract older families, with fewer young children.

In summary, looking at a housing policy strictly from the perspective of school enrollment, the following directions seem to be appropriate for Cape Elizabeth.

- 1) Encouraging as high a level of housing growth as feasible within the constraints of land, environment, and services.
- 2) Encouraging single-family home and townhouse development.
- 3) Encouraging housing with four bedrooms.
- 4) Encouraging housing of moderate costs.

These findings will have to be weighed against the housing needs of the community as viewed from other perspectives, such as social diversity, environment, town services, etc.

E. THE ISSUE OF DIVERSITY

In a recent statement of residential land use policy, the Cape Elizabeth Planning Board approved the following goal:

"Aim for a population which has heterogeneity of incomes, social and cultural groups, occupations, ages, etc.

Means: Permit a variety of housing densities and costs through land use regulation." (P. 3, Local Growth Policy Statements, GPCOG, 1977)

In the same statement of policy, the Board called for the restriction of apartment dwellings (Goal 1), the encouragement of housing conforming to the existing single-family character (Goal 3), and the restriction of housing development which cannot be shown to pay its way (Goals, 5, 6, 7).

Obviously, there is a contradiction here. If it is assumed that Cape Elizabeth's population is currently relatively homogeneous, and that the policies proposed would allow only new single-family homes with property valuations, it is hard to conclude that the result will be a heterogeneous population.

These policies display a certain ambivalence towards the issue of social diversity. It is easy to understand why. Encouraging social diversity in Cape Elizabeth would have its costs. Diversity would mean having more lower income families who would live in housing which would not pay as much in taxes. The families may also need more services from the town, such as police protection and social services. They may have different tastes than current residents - for example, preferring to live in a mobile home rather than a detached house. These are some of the risks involved if the goal of diversity were actually to be achieved.

On the other hand, there would be benefits as well. The new residents would bring new values and skills into town civic life. Cape Elizabeth children would grow up in a more pluralistic atmosphere, reflecting more closely the society they will enter upon leaving school.

There is an inherent tension between the natural tendency of people to choose to live near people who share their background and values, and the American ideal of providing equal opportunity for all social groups to better themselves and live where they wish. No matter what Cape Elizabeth's zoning and land use regulations might have looked like in the past few years, it is unlikely that their actual development would have been much different. Nothing in the zoning ordinance requires houses in the Cape to cost \$80,000. Yet this is precisely the type of housing which has primarily been developed in response to people's wishes in the last few years.

Having said this, however, this does not mean that the town has no responsibility in the matter. The town does have a legal and moral responsibility to insure that at least the opportunity exists for people of different incomes and backgrounds to live there. The town cannot build the houses, or make the land values different than they are. But it must be conscientious in seeking that it is not creating any unnecessary obstacles through its ordinances and regulations which prevent people of different incomes and social groups from living in Cape Elizabeth.

In this respect, Cape Elizabeth's record has not been as good as it could be. The town has passed unlimited Consent Resolutions for the Maine Housing Authority to operate in the town as its local authority. In this, Cape Elizabeth is one of only three towns in the region to have done so (Falmouth and Bridgton being the others). However, this resolution has not yet resulted in any family housing, and Cape Elizabeth is the only community in the region which has no subsidized family housing at this point. Cape Elizabeth prohibits mobile home development, another form of inexpensive housing. Only Pownal and South Portland have fewer mobile homes, and both of those communities have considerable amounts of subsidized family housing. Apartment development is restricted by Cape Elizabeth's ordinances. With the cost of single-family housing going up, it is expected that there will be more need for apartments in the future than ever before. Some sewered areas of Cape Elizabeth have one-acre lot requirements for single-family homes. This represents an added housing expense for people who wish to build in these areas, an expense which is difficult to be justified on environmental grounds. Beyond these, builders raise examples of frontage requirements, curbing and sidewalk requirements, road width requirements, and experience of unnecessary delays in Planning Board approvals, all of which have added to the cost of housing in Cape Elizabeth.

Obviously, a balance is needed here. The loose planning standards of the 50's and 60's have resulted in the environmental and septic problems which the town faces today in its sewer decisions. It is a false economy to remove restrictions which preserve a quality environment. On the other hand, regulations which are promulgated with the intent to discourage new housing development everywhere in town and which do not bear a direct and recognized relationship to the residents' health, safety, and welfare are inappropriate and probably illegal.

The issue of diversity is complex and difficult. Most people favor the goal of diversity in concept, but fear its potential consequences. The town is, in any case, limited in what it can do to achieve the goal. The minimum it can do is to remove the obstacles present in local regulations to allow a diversity of housing types.

If the town is to affirm diversity as a goal, the housing policy implications are:

- 1) Amending the zoning ordinance to allow a broader range of low cost housing types in the town than are now permitted;
- 2) Promulgating only those subdivision, zoning, and growth control ordinances which can be clearly related to the actual health, safety, and welfare of the town's residents; and
- 3) Participation in regional efforts to scatter low-income family housing on a fair share basis to urban and suburban communities (see Regional Housing Strategy, GPCOG, 1978).

Again, these housing policy requirements will have to be weighed against other town needs before a comprehensive housing policy can be established.

TECHNICAL APPENDIX
ON HOUSING COSTS

Assumptions of Procedure

1. Turnover based on 1970 Census statistics on proportion of households living in the town in 1965.
2. Existing home value distribution based on sample of Maine Multiple Listing Sales in 1977.
3. New home values based on a review of 1977 permit values with town building inspector.
4. Housing costs on new and existing homes based on:
 - 9½ percent mortgage, 80 percent of home value
 - tax rate of \$46.60 on 50 percent of value
 - \$10 insurance, \$75 utilities
5. Rental costs based on U.S. Department of Housing and Urban Development (HUD) market survey of February, 1978.
6. Affordability based on the assumption that a family can pay 25 percent of its gross income for housing costs (taken from HUD guidelines).
7. Same procedure used for Gorham and Cape Elizabeth analyses.

Cape Elizabeth Worksheet

Monthly Cost and Turnover

Type	Turnover	Cumulative Turnover	Cumulative %	Cost Inc. Utilities	Annual Income Needed
New Elderly Subsidized	10	10	6	(25% of income)	any
Existing apartments	10	20	11	\$250	\$12,000
Existing apartments	10	30	17	\$270	\$13,000
Existing homes \$26,000 and under	3	33	19	\$311	\$15,000
Existing homes \$32,000 and under	16	49	28	\$364	\$17,500
Existing homes \$38,000 and under	14	63	36	\$416	\$20,000
Existing homes \$44,000 and under	21	84	48	\$468	\$22,500
Existing homes \$46,000 and under	9	93	53	\$486	\$23,500
Existing and new homes under \$50,000	19	112	64	\$521	\$25,000
Existing and new homes \$50,000 +	63	175	100		\$25,000+

Appendix C - Cape Elizabeth Watersheds

CAPE ELIZABETH WATERSHEDS

Cape Elizabeth has four principal watersheds: Trout Brook, the Spurwink River (direct tributaries to the Atlantic Ocean), and the Great Pond Alewife Brook system. Each watershed has different characteristics, owing to their differing sizes, sensitivities and land uses. This section is to briefly discuss these watersheds in terms of their sensitivity and the land use management techniques available to minimize environmental degradation.

The Trout Brook watershed lies partially within the Town of Cape Elizabeth. This area is relatively urbanized, particularly in South Portland. The stream is estimated to flow at an average of 2.5 cubic feet per second. Its principal problems are sediments and stormwater runoff (bacteria). Since this is an urban waterbody, it is used for informal recreation by neighborhood children and it does serve an important drainage function. Stormwater runoff, with its high bacterial pollution adversely affects the first of these uses, and sediment loads reduce the stream's channel capacity increasing the frequency and severity of flooding.

Several possible control measures are available to abate the pollution of Trout Brook, but none will afford complete protection. Bacterial pollution caused by stormwater runoff can be reduced by the good housekeeping of the residents of the watershed. Additional pollution can be avoided by stormwater pollution controls recommended for new developments and discussed at the conclusion of this section. Sediment controls available are street sweeping and the agricultural conservation plan of the single farmer in the basin. Adoption of shoreland zoning provisions for the portion of this watershed would go far towards minimizing the pollution generated in Cape Elizabeth.

The Spurwink Estuary lies in three municipalities, Cape Elizabeth, Scarborough, and South Portland. At present, each contributes a significant pollution load to the estuary. Scarborough's sanitary waste discharges will be abated with the construction of a sewerage system for Higgins Beach. With the completion of the Environmental Impact Statement for Scarborough's proposed sewage system, the process of planning and construction can begin again. South Portland's dump has been closed, and its use will cease as the Greater Portland Solid Waste Management Board's baler completes its shakedown. Cape Elizabeth's pollution of the marsh comes from two principal sources, combined sewer overflows and stormwater runoff. Combined sewer overflows will be minimized or eliminated by the proposed Southern Cape Elizabeth Sewerage System. Stormwater runoff contamination will remain as the most important threat to water quality.

Bacteria in the estuary do not harm the native species, but they do reduce the utilization of the estuary by humans. For example, clamming and swimming are directly affected by concentrations of coliform organisms in excess of state standards. Thus, a long run program to control the adverse impact of stormwater pollution will increase the practical uses of the marsh. Such controls are discussed at the conclusion of this section.

Resource protection zoning applied to the tributaries to the Spurwink River in Cape Elizabeth would complement the other pollutant-specific recommendations made in this section.

The minor tributaries to the Atlantic Ocean in Cape Elizabeth do not significantly affect the coastal environment. Because of the flushing and turbulence of the waters of Cape Elizabeth, the relatively small amounts of water and contaminants discharged by any stream or ditch are readily assimilated. However, some of these streams may be important in their own right. At the present time, so little data is available on the flora and fauna in these streams and their present or potential recreational uses that a set of specific recommendations for pollution control cannot be developed. Instead, general provisions such as the stormwater runoff recommendation and shoreland zoning are recommended to assure that development does not preclude existing or possible uses.

Sewage disposal is of particular concern in these small tributaries.

The Great Pond is probably Cape Elizabeth's most sensitive waterbody in terms of potential measurable consequences of land use changes. Great Pond appears to be a naturally eutrophic waterbody whose condition is undoubtedly being degraded by the existing human activity within the watershed. Evidence of this degradation can be found - e.g. the high nitrite levels in the Sand Pit Pond, and in the generally elevated phosphorus concentrations found as part of the Conservation Commission's ongoing water quality monitoring program for Great Pond and its tributaries.

Great Pond is now used for a variety of recreational purposes. Wading or swimming appears to occur at the principal access point in back of the sand pit off Fowler Road. The pond does afford fishing and hunting opportunities, and its role as a wildlife habitat is important in an increasingly suburban community. While all of these uses would not be threatened by lowered water quality, increased productivity could change the pond from a resource to a nuisance. For example, as algae populations increase, the water becomes increasingly unattractive. Potentially, productivity could exacerbate the existing under-ice dissolved oxygen problem and further reduce the already stressed fish population. This, combined with more vegetative matter along the shore would increase undesirable insect populations. Thus, significant adverse consequences are possible.

Techniques available to prevent or minimize these consequences include the general resource protection zoning applied to smaller watersheds (as recommended previously), stormwater runoff controls, and local plumbing codes to assure adequate sewage disposal.

Stormwater runoff controls can and should vary to fit the particular problems identified in each watershed. Where flooding in downstream portions of the basin is of concern, the provision of detention basins or similar facilities to assure hydraulic load control will be all that is needed. However, where bacteria and nutrients are a problem, more comprehensive stormwater abatement techniques are recommended. Recommended bacterial pollution controls in the flowing and tidal waters of Cape Elizabeth should rest on limitations for storm drainage design requiring stormwater release rates and volumes not to exceed those on the undeveloped site.

For Great Pond, however, contaminants of concern include nutrients, specifically phosphorus and nitrates. Effective removal of these contaminants can best be achieved in an area such as this watershed by utilizing the infiltrative capacity of the area to be developed, and by maximizing the contact between the stormwater, which does run off, with soil and vegetation. This can be accomplished by surface drainage in developments where the amount of impervious surface is limited to 10 to 15 percent of the site.

"An owner of land has no absolute and unlimited right to change the essential natural character of his land so as to use it for a purpose for which it was unsuited in its natural state and which injures the rights of others."

Excerpted from *Just versus Marinette County*.

