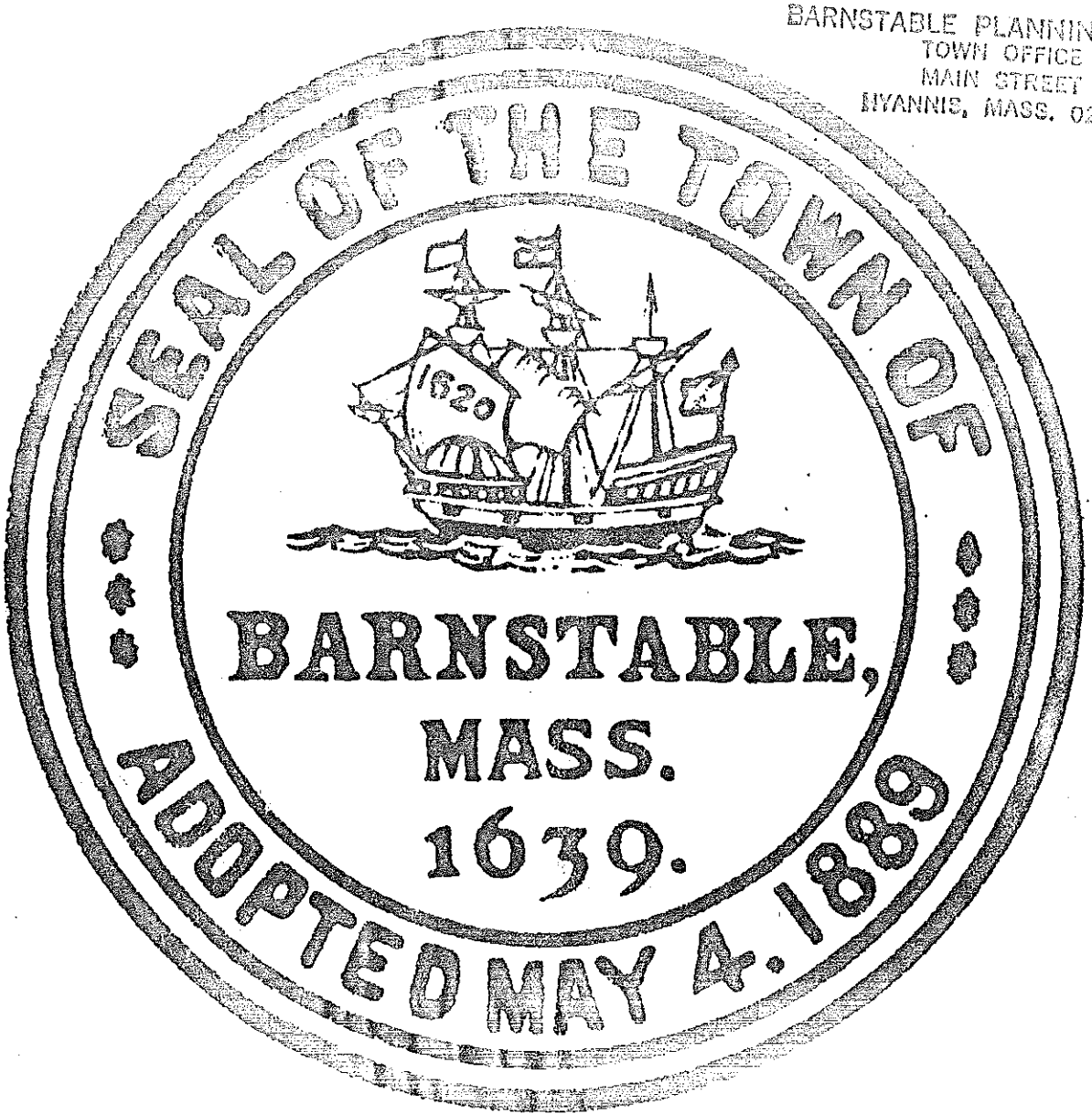
TOWNSHIP OF BARNSTABLE



1962 PLAN STUDY REPORT

Cotuit • Barnstable • Centerville • West Barnstable
Hyannis • Marstons Mills • Hyannisport • Osterville

ATWOOD & HUECKEL - PLANNERS - BOSTON

1962 TOWN PLAN STUDY REPORT

for

THE TOWNSHIP OF BARNSTABLE

Prepared under contract with the

COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF COMMERCE

with financial assistance from

U. S. Housing & Home Finance Agency

through the

URBAN PLANNING ASSISTANCE PROGRAM

under

SECTION 701, TITLE VII, HOUSING ACT OF 1954, as amended

for the

BARNSTABLE PLANNING BOARD

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BY

Atwood & Blackwell

The Planners wish to thank the Selectmen and other Town Officials as well as town organizations, neighborhood improvement groups and the many private citizens who have assisted us during the study period. Particular thanks are extended to the U. S. Fish and Wildlife Service for their study and recommendations.

BARNSTABLE TOWN PLAN REPORT

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Introduction

This Spring 1962 Planning Study Report establishes a wide ranging structure of fact, idea and concept to guide future public and private actions in Barnstable. It sets forth a physical development plan for the community based on two recognizable needs, 1) that of preservation and protection of Cape Cod landscape and village values, and 2) that of making the most of inevitable changes to be wrought by growth in future years.

Physically, these plan goals vary in different sections of the community. With exception of Hyannis, protection and preservation is the goal in all of the north and south shore villages. In Hyannis, the goal is meeting the future with appropriate actions to guarantee continued Hyannis business and commercial dominance.

The plan and back-up studies herein result from many considerations during the planning studies. It should be stressed that the plan is necessarily general; no community can plan its growth with the precision which lines on a map would seem to imply. New situations and factors inevitably arise to change and shape community life as well as individual lives. Work yet to come on zoning, subdivision control and capital budgeting will also influence ultimate plan goals. The Planners hope this report will be helpful in guiding townspeople towards the decisions needed to carry Barnstable into the future with an awareness of its problems and a vision of its potentialities.

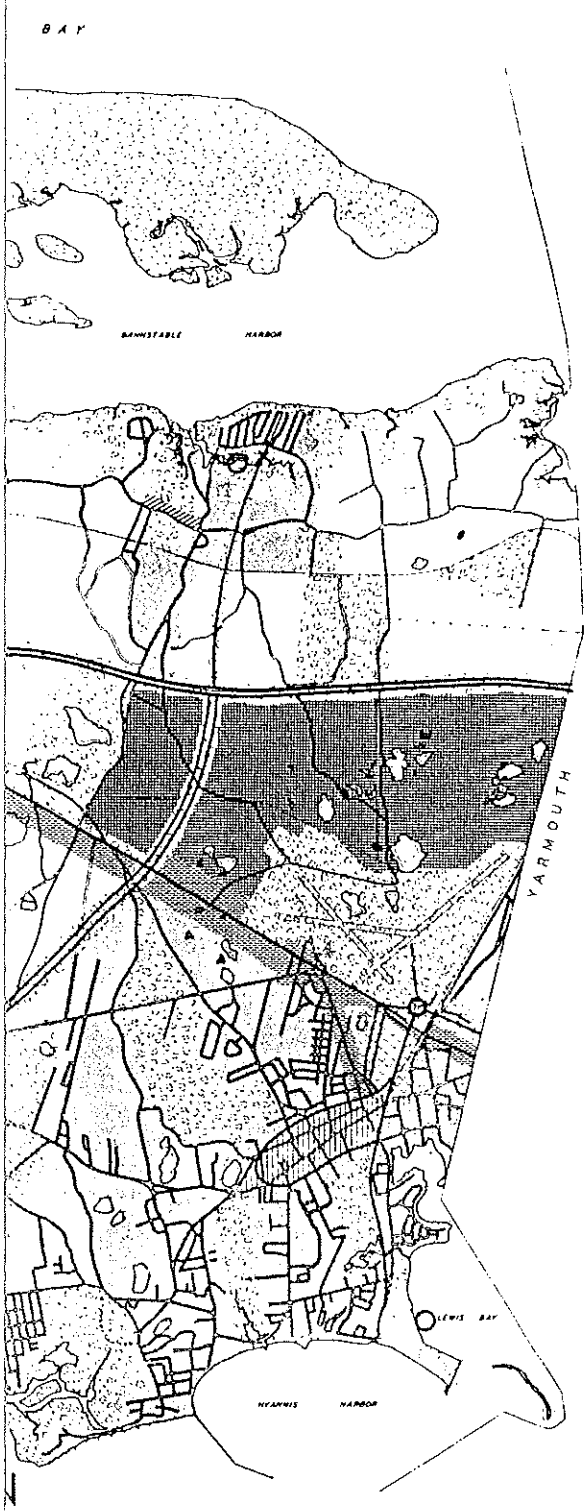
Chapter 1 The Long Range Plan

SECTION I THE TOWNWIDE PLAN

The Townwide Plan and Hyannis and Osterville Plan details show on these pages results from many back-up studies in the chapters that follow. The plan is necessarily general, designed to guide town decisions on zoning, subdivision control, land acquisition, highway placement and construction, public and private facilities construction and beach and harbor development. By land use and circulation proposals the plan calls for:

Residential Land Disposition

- Concentration of urban density homes, apartments and multi-family uses adjacent to Hyannis Downtown where many old large homes will be converted to smaller units in the future and where this type use already predominates.
- Concentration of suburban density (min. 15,000 sq. foot lots) around the present village centers, in patterns which preserve spatial independence.
- Throughout inland Barnstable, development is proposed at density, minimum 1 acre lot size to permit safe on-site sewage disposal, and on-site water supply wherever possible. Permitted density might well vary upwards from the one acre figure, particularly in the middle and western portions of the township.



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US.

WAREHOUSING & DISTRIBUTION

OCEAN ORIENTED DEVELOPMENT

PUBLIC LAND, OPEN SPACE, FLOOD PLAIN ZONE & CONSERVATION

MAJOR HIGHWAY NETWORK

O MARINA

Commercial Land Disposition

- Downtown, intensive commercial development permitted only in Hyannis on any large scale.
- Highway oriented commercial uses, generally non-competitive with Downtown, are proposed as located on the map. Highway uses would include motels, gas stations, restaurants, etc.
- Neighborhood Business uses are proposed as located. Such uses are neighborhood in scale, designed to serve neighborhood convenience needs, not to draw customers into the villages from the whole of Cape Cod.

Research Park

- Proposed low land-coverage, high-calibre campus-type developments with intermixed conservation and water supply protection areas.

Ocean Oriented Uses

- Permit controlled development of motels, restaurants, resort/recreation in conjunction with marina or beach facilities but only where those uses can be provided adequate circulation and only where their presence will not disrupt other stable land uses.

Warehousing and Distribution

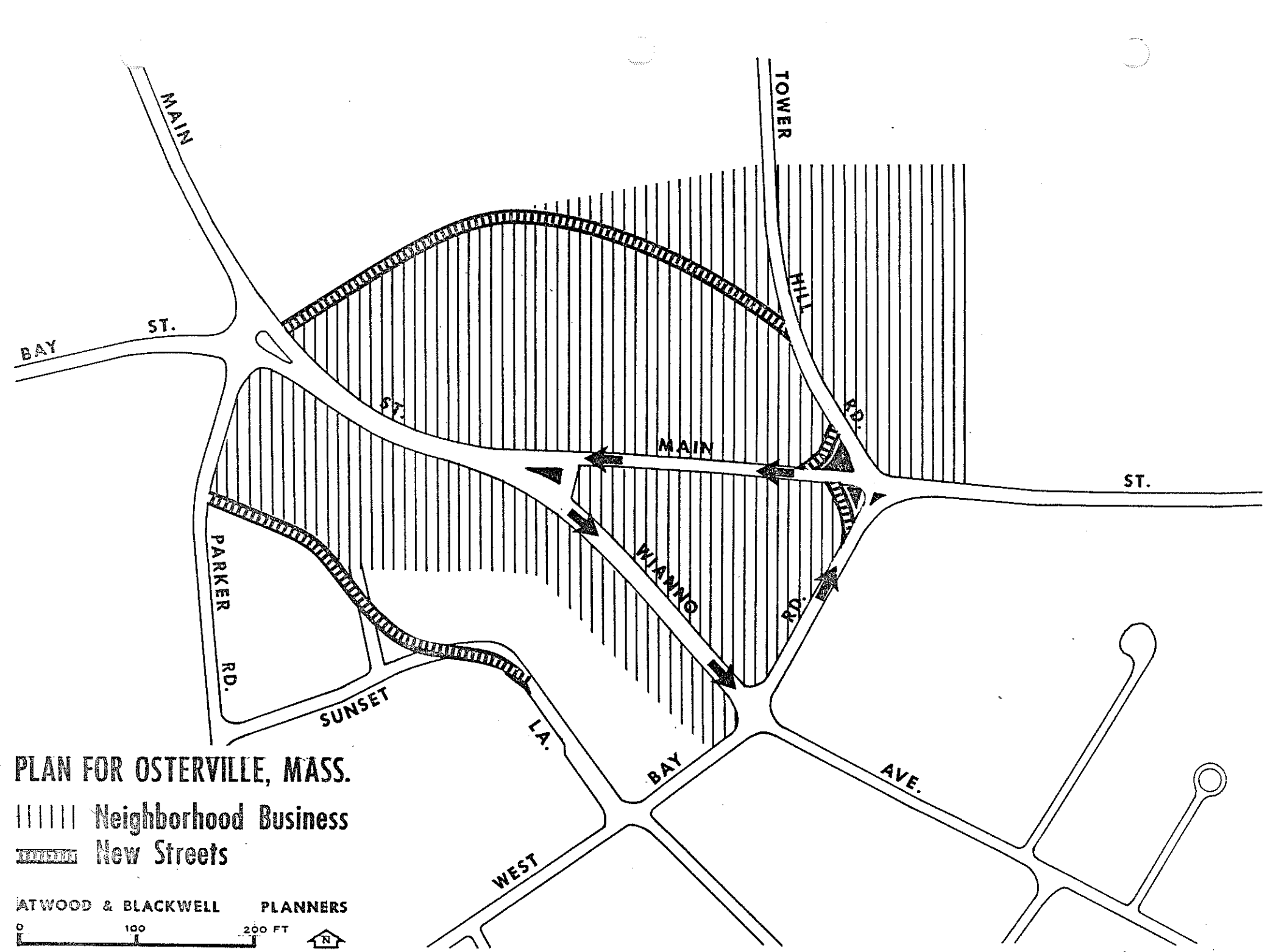
- This activity recommended for Hyannis, as shown, for transportation and circulation reasons.

Public Lands

- Through flood plain zoning, conservation zoning but preferably through gift or town acquisition obtain the recommended public lands patterns needed to separate the individual villages.
- Marina development limited to locations shown because of circulation and on shore land use reasons. See marina and harbor Section.
- Beach development mainly limited to Kalmas Park and Sandy Neck (see Beach section)

Circulation Proposals

- Set aside land now for eventual widening and relocation of portions of Route 28 and for eventual conversion to Parkway. This facility will tie together the individual South Shore villages, will carry through traffic around Hyannis, and open-up the research park lands for development. Tie new Hyannis traffic parkway into this facility, and with Yarmouth, work out arrangements for westerly Route 28 replacement. Develop new town street to North Shore villages of Barnstable and Cummaquid as shown. Provide secondary street improvements as shown in the Hyannis and Osterville plan details.



PLAN FOR OSTERVILLE, MASS.

Neighborhood Business

New Streets

ATWOOD & BLACKWELL PLANNERS

0 100 200 FT

N

SECTION II OSTERVILLE

Land Use

Confine neighborhood commercial uses for the immediate future to present patterns. Eventually permit expansion of commercial uses northerly of Main Street as illustrated on the diagram.

Circulation

In immediate years develop a one-way steady-flow rotary traffic movement around the triangle composed of Wianno Avenue, West Bay Road and Main Street. Eventually, with extension of neighborhood uses northerly, develop a new cross street between Tower Hill Road and Main Street. Improve access to parking lots by developing new entrance from Parker Road as shown and improve Sweet Lane.

SECTION III HYANNIS DOWNTOWN PLAN

General

The major Hyannis planning problems in 1962 appear to be these: the recent boom has placed Hyannis in a state of land-use flux. Downtown has been expanding and redeveloping in all directions without planned goals. Shopping functions have not been set off from other land uses, nor appropriately located for best overall merchandising relationships. Prosperity is making downtown Hyannis more chaotic as the scramble to construct new stores continues. There is need for an overall plan which integrates different

store types, different land uses, different summertime and wintertime shopping space needs and differing transportation and parking requirements.

From a circulation standpoint, Hyannis is hampered by an old inefficient street pattern. All traffic entering and leaving downtown must do so over the same old streets which served the village when it was one-third its present size. Further complicating the problem, most through traffic, not destined for downtown, must mix with shopping or local traffic somewhere between the airport and South Street.

In addition to need for shopping area and overall circulation improvement, other problems are presented by growth and change. The inner harbor is too small to accommodate its growing recreational and transportation role. The community college site appears too small. A real question is raised concerning long term town office functions at present site. The fire station will eventually need replacement. The east end of Main Street is undergoing conversion pressures. Between Barnstable Road and the Old Colony tracks is an area of mixed land use appearing to have little long-range residential value because of traffic and other pressures.

Business and Merchandising

Hyannis has two major business districts -- Downtown, and the developing airport shopping center. Downtown extends for nearly a mile from the west end of Main Street to beyond Center Street at the east end.

HYANNIS LAND USE
JLATION PLAN

NTOWN COMMERCIAL

IWAY COMMERCIAL

EHOUSING & DISTRIBUTION

ANSIDE USES

DENTIAL COMMERCIAL

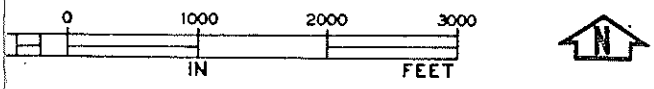
AGE RESIDENTIAL

IC

ARCH PARK

OSED PRIMARY STREETS

OSED SECONDARY STREETS



At present, the airport shopping center has two major stores -- a supermarket and a discount department store. This center is expected to grow as expansion is still possible along Route 28. However, the planners feel that the area will never become the major Cape Cod regional shopping center, as significantly large expansion is limited by shape and size of parcels and ownership problems.

The major shopping center proposed on vacant land between Routes 132 and 28 would have great long term impact upon Downtown because of its large site size and location relative to highways particularly if Route 28 is relocated as proposed. However, with improved circulation, parking and design, the present downtown could and should remain the commercial shopping center of Cape Cod. There is enough land in downtown to support some 400,000 square feet of retail sales space and maintain a 3 to 1 parking ratio. This amount of floor space would require $50,000,000 in retail trade, a level not to be reached until year 1980. By removing non-retail use and developing South Street, land for retail space is available through year 2000.

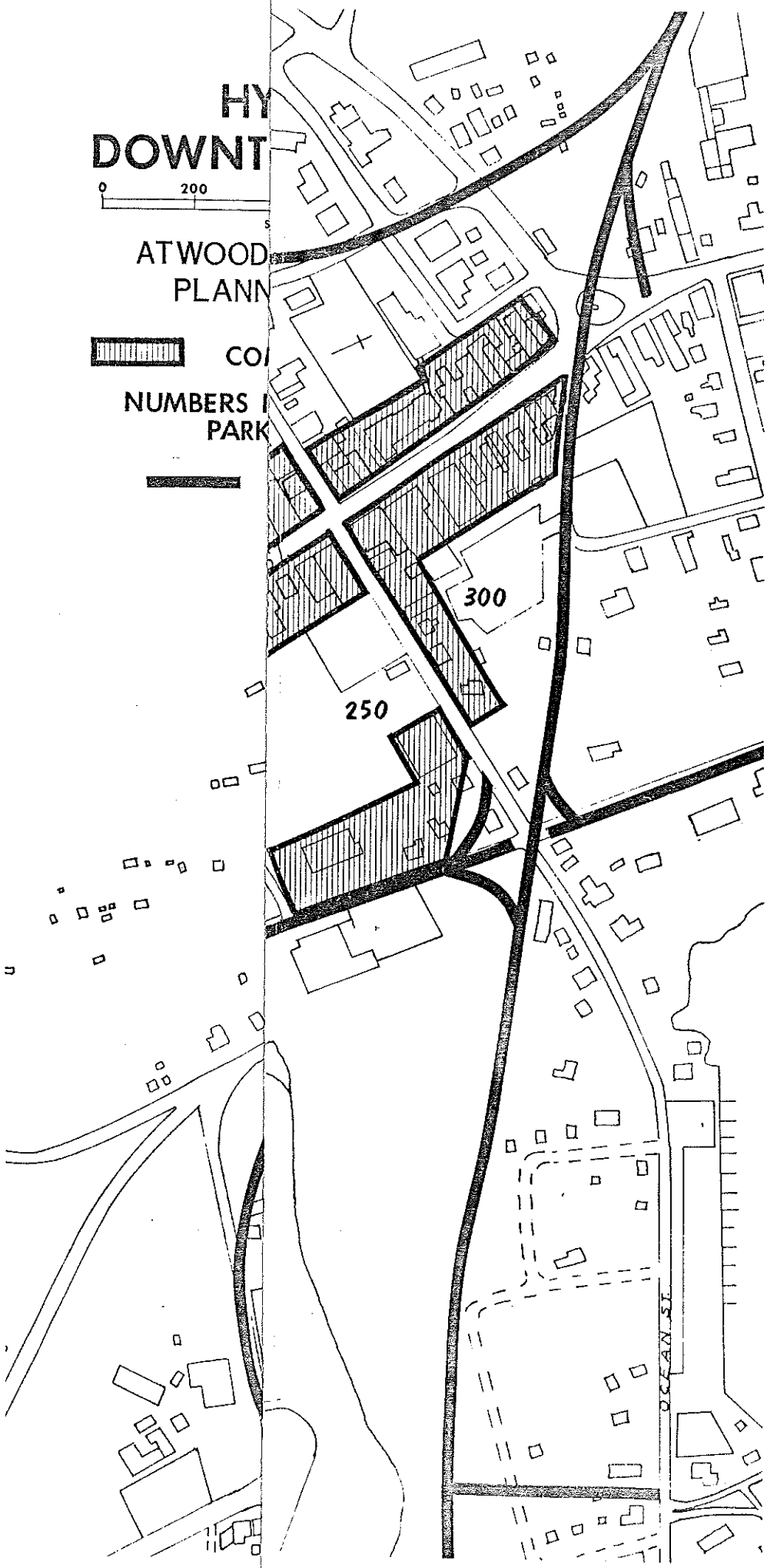
To achieve the above goal, downtown will have to be expanded in area, "soft" uses removed, better circulation means achieved, additional parking developed and shopper amenities introduced. Complicating the problem is the varying seasonal factor. The planners believe that the seasonal division of Main Street between year-round and summertime use should be more solidly reinforced. The

projected Downtown business area is not capable of supporting year-round shopping. The largest municipal economies and most favorable merchandising and business arrangement would result from development of two distinctly differing shopping centers that can be joined as one during the tourist season to complement one another. Ideally, all shops and stores in one would be open year round. In the other all would be closed and all services shut off for the winter. Only minimal snow plowing for fire protection purposes would take place.

The division between the two shopping areas should be roughly along a north/south axis near present downtown Stop & Shop.

The year-round shopping complex would be spatially oriented around major parking lots at the east end. Except for landscaping, construction of new pedestrian walkways, development of new buildings, in spatial layout it would be much like the pattern found today.

The summer shopping area would be oriented around pedestrian malls. Color, brightness and gayety would be the keynotes. All traffic would be removed from Main Street and the whole area redeveloped. Uneconomic, or old structures would be removed and new structures introduced. Landscaping, outdoor cafes, music and fountains would be planned into redevelopment. The summer shopping area design would express the excitement of vacationtime away from home. Because it would not be used in the winter,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the problems inherent in the design of a year round pedestrian-oriented shopping center would not be present. As such the plan could be developed with a Mediterranean or tropical flavor.

To undertake the recommendations proposed above will require the wholehearted participation of all Downtown merchants and landlords, particularly those in the west end. For this reason, the planners have only developed a schematic diagram of how a portion of the west end of Downtown might look after redevelopment. Precise plans for such actions will require 1) merchant and landlord participation; 2) building by building structural analysis, 3) municipal participation in highway and parking development.

The Hyannis Plan

The recommended Hyannis plan shown here area-wide with a downtown detail presents a structure within which downtown can prosper and grow without disrupting nearby residential uses or damaging the oceanside recreational potential of the Hyannis South Shore.

The key element of this downtown plan is the parkway proposed along the former Old Colony R.R. right-of-way. This facility serves three purposes: 1) rapid movement of traffic into the downtown shopping area; 2) quick passage of traffic destined for south shore Hyannis beaches without disrupting shopping patterns; 3) establishment of land use boundaries.

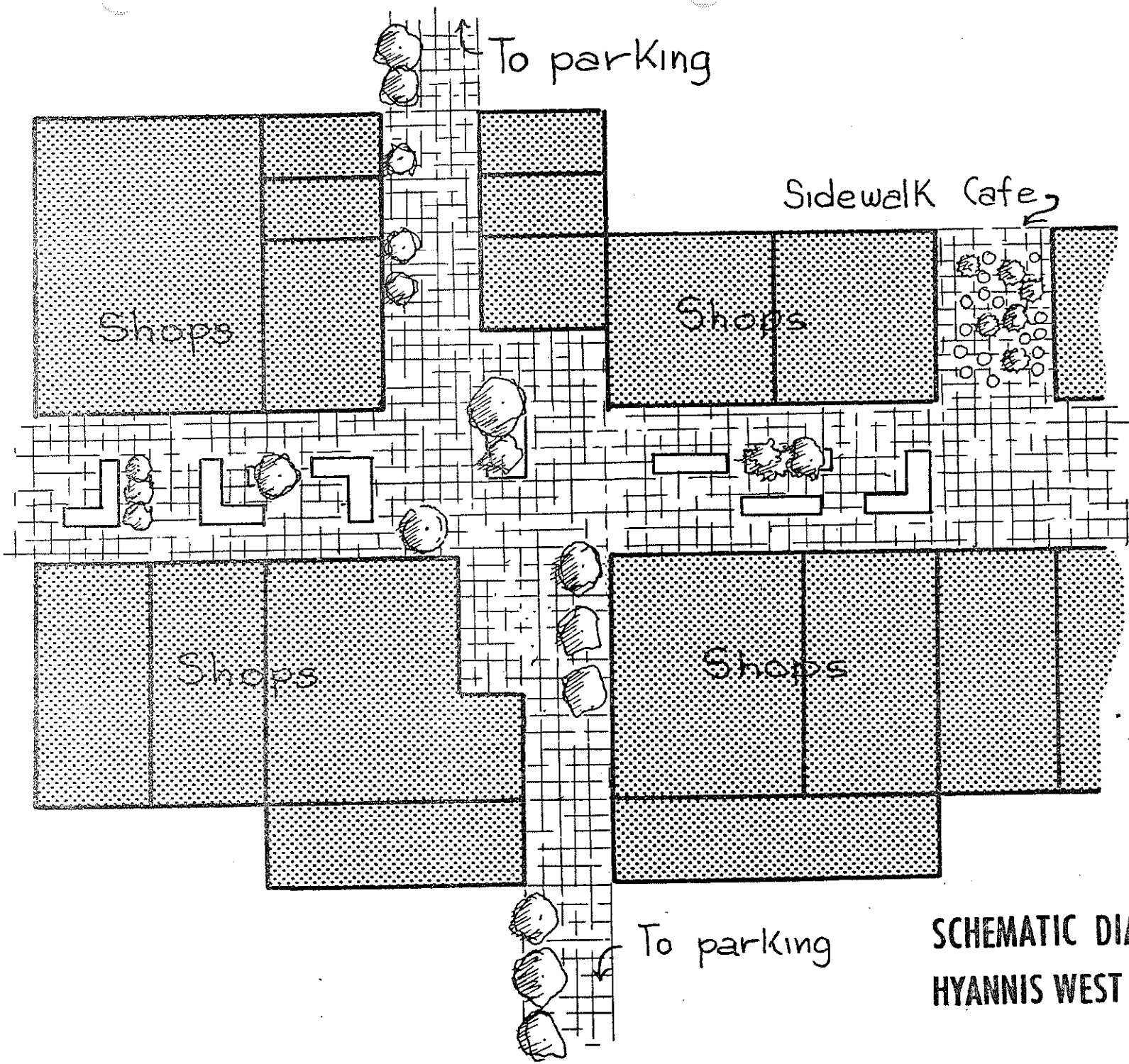
From this major circulation spine a one-way perimeter loop is proposed to encircle and define downtown. The loop is composed of a new landscaped parkway on the north side, as shown, to establish a solid boundary marking the separation of commercial and residential use. The southern portion of the loop street uses a widened South Street.

Within the major downtown loop are cross streets to provide needed internal circulation. Eventually portions of Main Street could be closed to allow free pedestrian movement. With construction at the loop-road and redevelopment at the west-end summertime shopping area, that portion of Main Street would be permanently closed.

Parking lots are proposed as diagrammed. Within the year round area, the intent is to create a shopping center configuration which uses the stores on the north side of Main Street as one merchandising axis and stores on the north side of North Street as the other axis. Between, landscaped parking lots are proposed, with pedestrian walkways connecting the two store areas (easterly of the present Zayre, W. T. Grant and Stop & Shop complex).

The area between Barnstable Road and the Old Colony Railroad is proposed for warehousing and commercial use because of its proximity and access to the proposed Hyannis major circulation improvement.

The east-end and certain other areas close by downtown are proposed for residential development of a commercial nature, that is for apartments, motels, nursing



MAIN STREET
benches, landscape, color, fountains, introduced

SCHEMATIC DIAGRAM :
HYANNIS WEST END REDEVELOPMENT

homes, hotels and professional offices. Off-street parking provisions and appropriate controls to govern conversion of large old dwellings into smaller units are needed.

Subject to engineering review, a marina is proposed just north of Kalmus Park. Large vessels would operate from here, freeing the inner harbor for small craft. This locus appears to be one of the few Town of Barnstable locations where traffic ways can be developed to accommodate large-scale, intensive resort and recreational uses. Also such uses are proposed easterly of the new Hyannis parkway from Kalmus Park northerly to the head of Lewis Bay. Public park recreational and parking uses are also proposed along the new Hyannis parkway as shown on the plan diagram. The exact location and extent of such uses are subject to town action on the plan proposals.

Chapter 2 Land Use

I. Town-wide

Barnstable land uses and patterns of buildable lands are tabulated and analyzed in this memorandum and accompanying maps and tables. The Town has been divided into 16 planning units. Within each planning unit land use acreages have been tabulated on the basis of the land use classifications established early in the program. To arrive at an overall figure for buildable lands, all wooded or open areas where there are no buildings were analyzed in terms of steepness or swamp characteristics. These characteristics, undesirable for building purposes were then added to the presently built-up areas within each planning unit, and the total subtracted from the overall aggregate land supply within each planning unit. The resulting buildable lands figure is an indication of the amount of prime, raw acreage which conceivably could support some form of development.

The buildable lands tabulation does not consider ownership patterns. In an area of estate development where each house is surrounded by a considerable amount of vacant land owned and controlled by the estate owner, these vacant lands have been considered part of the total buildable lands supply. This, of course, assumes that large estates may likely be cut into smaller parcels at a later time. This has been national experience but may or may not be true for Barnstable.

Barnstable Land Use Tabulation:

The following table is a townwide capituation of land uses by use, not ownership. Importantly, all public holdings have not been included within the acreage tabulation, only land characteristics. As the study progresses, more detailed land use and ownership data will be forthcoming, townwide and by land planning subsectors.

Land Use	Acreage
Woodland	20,905
Grassland	4,695
Water	1,790
Swamp	5,085
Cranberry Bog	285
Commercial	230
Public and Semi-Public	435
Hotel/Motel	85
Residential	1,795
Sand and Gravel	315
Beach and Dunes	1,775
Industrial	10
Parking	65

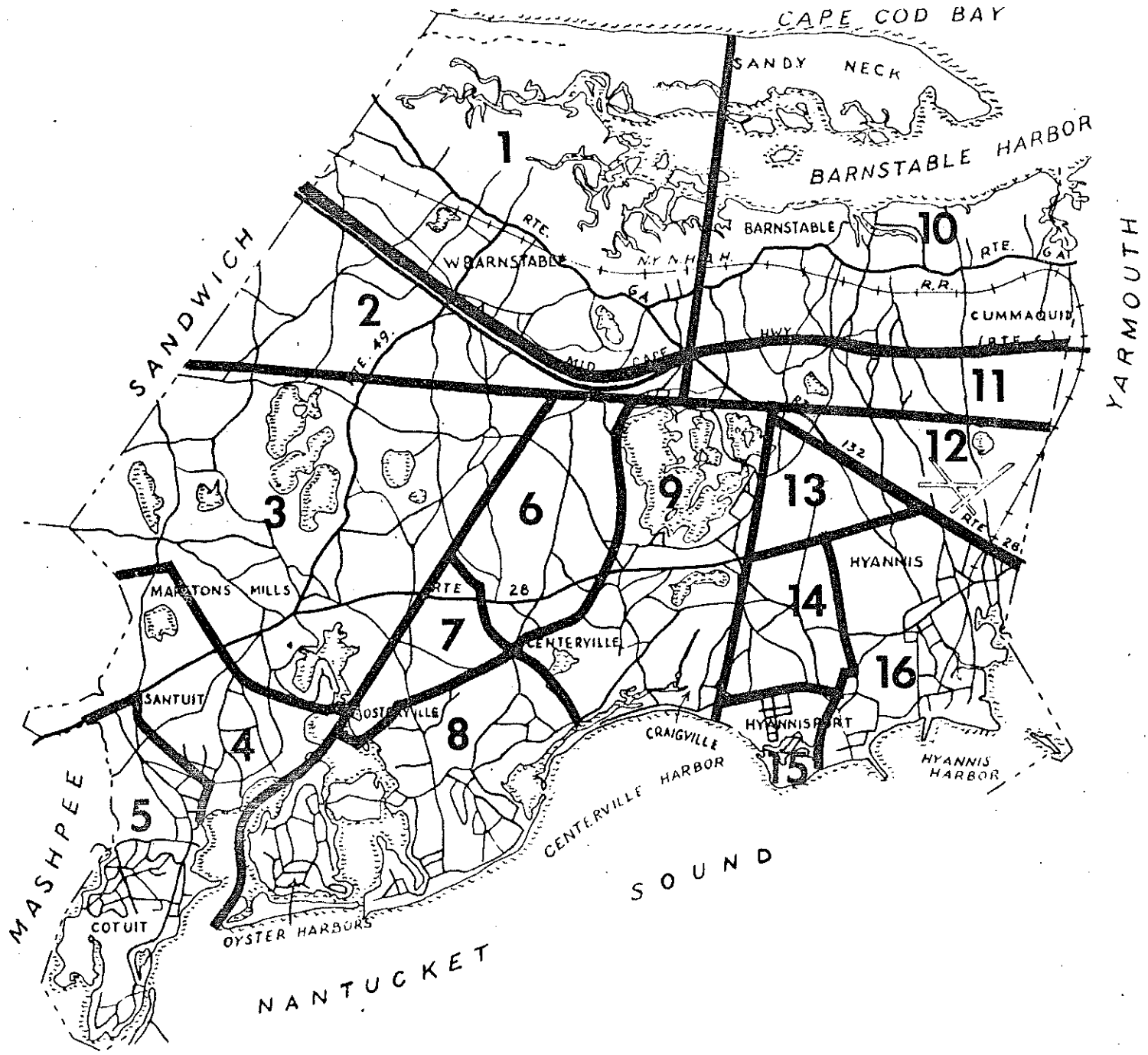
Barnstable Land Use Acreages and Buildable Lands analysis

Sector	Woodland	Grassland	Swamp	Water	Cranberry Bogs	Sand & Gravel	Beach & Dunes	Residential	Hotel & Motel	Commercial	Industrial	Public and Semi-Public	Parking	Steep Slope	Total Unbuildable Lands	Buildable Land	Total Acreage
1	1683	896	3021	80	40	1	361	68		11		347		481	4286	2221	6507
2	1780	150	20			80		2				184		366	573	1564	2137
3	4430	820	130	515	145	15	2	65	5	10		45		485	1480	4767	6247
4	1332	102	50	65	40	5	5	25		1		166		119	481	1320	1801
5	967	264	134	25	5	20	75	175	1	3		51		106	505	1200	1705
6	1439	25	95	5	10	10		15		1		81		91	307	1373	1680
7	511	90	45	20	10	15	142	15	5	24	5	30		47	178	554	732
8	1232	437	242	85	10	15	33	370	25	5	100	97	9	99	964	1712	2676
9	1196	293	295	800	15	15	282	225	25	4		803	5	128	1610	1394	3004
10	1709	711	735	20		6		149		2		354	2	461	2442	1979	4421
11	1152	24	5	62	5	37		3	2	45		603		195	665	981	1646
12	417	84	4	14		28		19	2	15		81	5	13	733	488	1221
13	613	5		8		17		5	20	9		138	5	6	157	612	769
14	795	58	2	14		5		80	5	94		107	5	22	280	831	1111
15	78	33	84	4		1	30	75	20	28	5	280	17	12	271	141	412
16	482	235	73	24	10	20	17	491	20	224	10	3467	48	2638	1046	722	1768
	19816	4227	4935	1741	280	275	947	1782	85						15978	21859	37837

BARNSTABLE, MASS.

ATWOOD & BLACKWELL, PLANNERS, BOSTON

SCALE IN THOUSAND FEET 0 1 2 3 4 5 6 7 8 9 10



LAND PLANNING SECTORS

Another consideration which has not been included within the raw buildable land totals is the accessibility factor which influences speed and direction of development. For instance, Sector 3 has a great deal of vacant, buildable land, but its remoteness and general development costs make it likely that it will not develop as quickly as will some of the Hyannis Sectors.

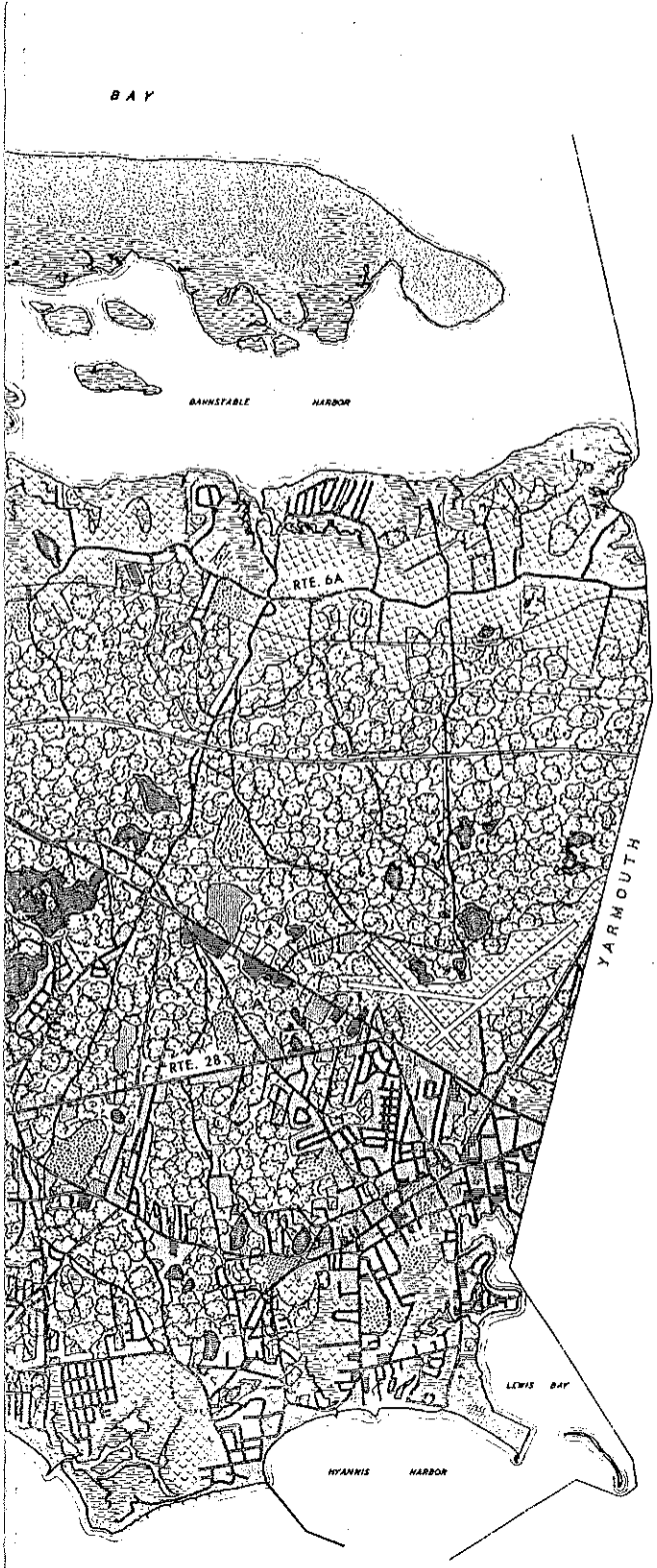
Another factor which affects the speed and location of the withdrawal of buildable lands into built up land use categories is the extent and adequacy of utilities. Outlined on the Planning factors map are the generalized areas where water and sewers are now available. Easily noted is the fact that less than 20% of Barnstable land area now has public water and only 5% is serviced by sewers.

For purposes of discussion, we have assumed that water can and will be extended in time to most sections of the community where development might take place. No physical limitations such as underlying bed rock or ledge would seem to present obstacles to such expansion. Sewers, on the other hand, present another problem. While sewers could conceivably be extended to all portions of Barnstable, a prudent municipal policy should restrict development density in certain areas of the community to insure that sewers will not be required, all effluent being disposed of on-site as now in most sections of the community. The sandy, gravelly nature of the soils underlaying Barnstable are ideal for this approach.

Probably the sectors immediately surrounding Hyannis (Sectors 11, 12, 13, 14, 15), are the only areas where sewer expansion from the present system is feasible or warranted. However, separate sewer systems may well be required for Osterville and Barnstable on the North Shore as these areas develop further.

Use of the Table and Maps

The purpose of the accompanying table and the planning factors map is to help determine basic land use decisions. For instance, consider Section #5, the Southern Cotuit area. In the tabular columns on land use and buildable acreages, we find that the supply of land which could be built is over double the land area already built up and the land areas which for reasons of steep slope and swamp are considered unbuildable. The 1,200 acres of buildable land here could support at the Barnstable RB residential density of minimum 10,000 square foot lots, some 4,224 new houses, even deducting 20% land area for streets and other community facilities. Considering an average 3.5 persons per home, some 14,784 more people could conceivably live in Sector 5 on a summertime or year-round basis if the area were to be fully built-up. These basic tables are of inestimable value for computing school enrollment factors, and for projection of land use requirements, particularly commercial areas.



LAND USES

- INLAND WATER
- SWAMP
- CRANBERRY BOGS
- PARKING
- RESIDENTIAL
- HOTEL & MOTEL
- COMMERCIAL
- INDUSTRIAL

MI-PUBLIC USES

Some Observations on the Tables

1) The Planners most immediate reaction to the tabulated land use material is astonishment at the amount of land presently wooded. Barnstable has almost 20,000 acres of woodland. From a planning point of view, how much of this can be preserved from development by conservation zoning, town forest extensions and large lot zoning?

2) Almost 22,000 Barnstable acres are considered buildable land. Even at half acre residential development, this could mean almost 40,000 new homes, over 100,000 people if all of this land were committed to residential development.

3) Barnstable has a surprisingly large amount of land in public and semi-public categories, almost 3,500 acres. But more will be needed if the character of the town is not going to change, especially considering the population magnitude that conceivably could be added to the community.

4) Almost half of all commercial land use is concentrated in the Hyannis Sectors of Barnstable. This will increase and be intensified. However, in other sections of Barnstable, particularly at the village centers and along major highways, planning decisions must be made

4) continued

on the amount of commercial land use to be permitted. Will we hold village center commercial land uses to a size sufficient to serve only the convenience needs of the village? Should we limit highway commercial uses to major interchanges?

5) Some 1,800 Barnstable acres are now built up in residential land use. The heaviest concentration, expectedly, is in Hyannis, about 500 acres. But Sectors 9, 12, 13, 14, 15, 16 combined, less than 25% of total Barnstable acreage have over half the aggregate residential land use in the community. This area (roughly the Hyannis, Hyannisport, Centerville area) still has over 4,100 acres of buildable land, enough to add over 14,000 new residential buildings on 10,000 square foot lots, over 40,000 more people.

6) Hotel and motel uses are mainly concentrated in the Hyannis Centerville area, over 75% of this land use category. Should this be continued in the future?

II. Urban Hyannis Land Uses

Urban Hyannis is a complex land use pattern. Its complexity results from the winter/summer variables, the fact that it is the commercial center of Cape Cod, the rapid expansion of recent years and its nearness to recreational areas. The "Downtown" is a loosely developed strip shopping center over a mile long in summer, extending along Main Street from North Street to beyond Barnstable Road. This 5,800 foot strip has a 3,400 foot long "core" stretching from Filene's to Barnstable Road. In the core area are located most of the stores open year round. The core is also weakened by non-compatible uses or uses which do not contribute to the vitality of Downtown. Extension of the shopping center is now occuring along North Street. A semi-suburban center has sprung up across from the airport in the last year. Another center has been announced next to Storyland between Routes 132 and 28.

Within the downtown area, bounded by North Street, Barnstable Road, Elm Street, Centre Street, Main Street, Pleasant Street and South Street, is some 719,400 square feet of first floor building space, This also includes non residentisl uses on the north side of North Street.

Hyannis Land Uses	Sq. feet	%
Commercial	366,000	51%
Service	108,000	15%
Residential	94,000	13%
Public & Semi Public	91,600	13%
Vacant	36,400	5%
Industrian	23,600	3%
	719,400	100%

Motels, hotels and rooming places are located throughout Urban Hyannis, but mainly are concentrated on Iyanough Road and south of Main Street between Downtown and the ocean. Rooming houses are located in clusters along East Main Street, Ocean Street and South Street. They are also found singly on most of the heavily travelled roads as well as on many side-streets throughout the area.

Marine development is located exclusively on Lewis Bay and the inner harbor, with the exception of a small boat shop on North Street and the private marina of the Yachtsman Motel.

Recreation uses fall into two categories, those privately run, such as theaters, amusement parks and golf driving ranges, and those publicly run, such as beaches, school playgrounds and parks. Both categories are in Urban Hyannis. Private development is located almost exclusively along Main Street while public facilities are spread through the area.

Service industries are, for the most part, located within the downtown area between North and South Streets. Some professional offices are located outside of this area, primarily at home or near the hospital. Increasing conversions of residences for professional offices on South Street and other streets near Downtown indicate the need of downtown offices, of which none seem to be available. Lack of downtown office space

is also indicated by construction of new offices at locations remote from the central part of Downtown.

Personal services are scattered throughout the area, though most are concentrated near the heart of Downtown. Wholesale and distribution firms appear to be located on Route 28, other major roads and Main Street. Manufacturing, as it exists in Hyannis, is for the most part small. The newspapers appear to be the major manufacturers within the area. Warehousing and storage, particularly fuel storage along the railroad north and south of Route 28, is extensive.

Some public buildings are located in highly valuable downtown areas, such as the Town Hall, Post Office and the Community College.

Total off-street parking spaces in Urban Hyannis number over 4,200. Some 1,200 spaces are in Downtown.

Major questions raised by the land use mapping of Downtown appear to be these:

1. How far can uncontrolled expansion of commercial uses take place outside of Downtown without endangering the vitality and tax productive capacity of present Downtown along Main Street? The planners feel that announced plans for another shopping center between Routes 28 and 132 can cause serious Downtown repercussions.

2. In light of the above, how can Downtown be made more productive in the face of commercial expansion elsewhere? The western end of Main Street is already suffering. Low-intensity uses along Main Street add to the problem. If Downtown is to survive, circulation and parking must be improved and building and rebuilding take place.

3. Rooming houses have long been a part of the Hyannis scene, but in recent years the modern motel has tended to undercut the rooming house business. We expect that this trend will continue and that more motels and resorb facilities will be constructed in Hyannis. The problem is not so much one of locating the yet-to-be-built facilities, but of determining what to do with areas strongly developed with rooming houses.

4. Ocean-oriented uses are now only a thin shore line band stretched almost the full length of Lewis Bay. The problem is where and how to thicken the band, if the community desires tax producing private recreation expansion tied into downtown development.

5. Housing areas in urban Hyannis are beset by many pressures. There is the northward push of Downtown, the pressure for conversion into office space and the

(5. continued)

continuing pressure for summertime re-uses. This latter factor appears particularly acute between Downtown and the ocean. The plan must designate future uses with defensible boundaries.

6. Warehousing, distribution and storage uses will become increasingly important in Hyannis as Cape Cod increases in population. These activities are mainly based near the airport today, but retail commercial uses are rapidly developing at the same locus, to the detriment of both forms of use. As a consequence, new warehousing areas will have to be developed and protected somewhere near the airport location.

7. Steamship Authority operations from Hyannis continue to be an unknown factor in future land use planning. Authority operation as proposed off Gosnold Street will exert, we fear, strong pressures for re-orientation of present residential uses in this area.

Chapter 3 Economic Base

SECTION I INTRODUCTION

Barnstable Township, with its Hyannis commercial and business focus, is the economic center of Cape Cod. U. S. Population Census, 1958 Census of Business, and Bureau of Employment Security data reveal that Barnstable, with 19% of Barnstable County population had 25% of all Cape Cod firms reporting to the Division of Employment Security; had 35% of reported Cape Cod annual payroll and 34% of Cape Cod employment. Although small, Barnstable Township had 32% of reported Cape Cod manufacturing employment. The town had 80% of Cape Cod jobs in the transportation, communication and public utilities field. Barnstable had 36% of Cape Cod jobs in wholesale and retail trade. The town is significantly high in finance and service employment. In dollar terms Barnstable firms account for 69% of Cape Cod wholesale trade volume and about 30% of Cape Cod retail sales volume.

The economic dominance of Hyannis is due in large measure to its strategic location at the geographic and population center of Cape Cod. The railroad, harbor, airport and highways all have contributed to its present favorable position. The major economic planning need is enhancement of Hyannis commercial and business position to combat decentralization of present economic constituents and the competition to arise from new centers outside Hyannis Downtown. In addition

there is need to broaden the present narrow town employment base, heavily oriented around the recreation industry and retail trade. In effect, the economic base of Hyannis (and all of Cape Cod) depends in large measure upon summer tourists. Their dollars, distributed all over Cape Cod in the summer, provide the year round dollars to keep Hyannis alive and vital twelve months of the year.

The major economic development opportunities for Barnstable Township appear to be these:

- Physical improvement of downtown Hyannis to insure its continued commercial dominance in retail and wholesale trade. Although presently secure, growing traffic congestion, lack of expansion space and lack of parking presents growing danger to continued downtown Hyannis supremacy.
- Capitalization upon Barnstable Township public and private facilities for research park development near the airport.
- Intensification of ocean-oriented resort and recreational development at selected locations in the Barnstable Township.

These opportunities with underlying statistics, tables and details are presented in Economic Base Sections II, III, IV and V, which follow.

SECTION II TOWNSHIP OF BARNSTABLE, EMPLOYMENT AND TRADE COMPARISONS WITH BARNSTABLE COUNTY AND OTHER CAPE COD COMMUNITIES

1. Number of Firms, Employment and Payroll

With the exception of Bourne, Barnstable Township is the most heavily populated town in Barnstable County. Its 1960 population was 13,405, approximately 19% of the total County population.

The Town is the major Cape Cod commercial center. It has more firms, employs more people and has a higher annual payroll than any other Barnstable County town. In most cases, Barnstable has a higher proportion of firms and employees than its population would indicate.

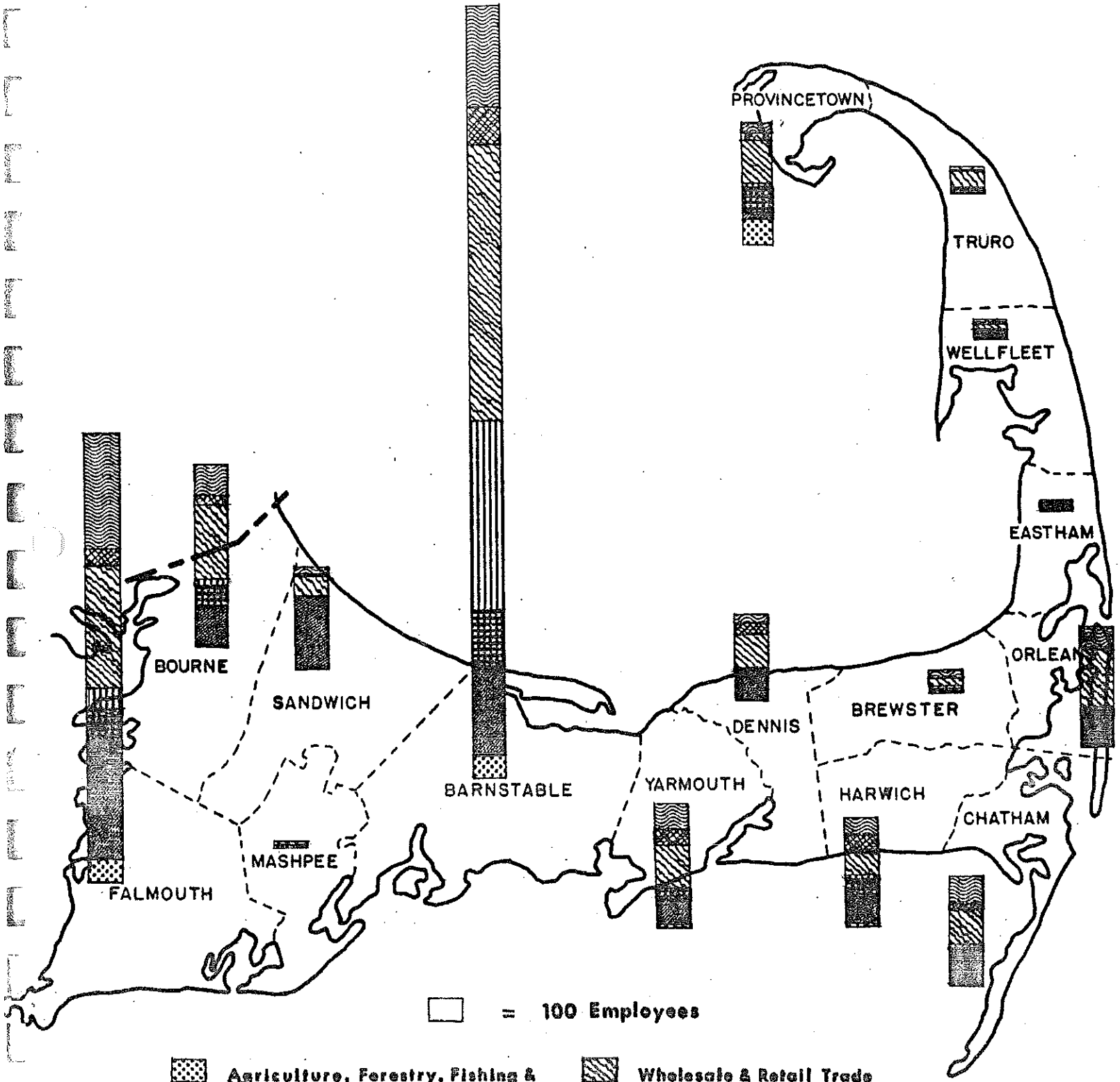
A total of 2378 firms in Barnstable County reported to the Massachusetts Division of Employment Security in 1958. These firms had an annual payroll of over $37,000,000 and employed 9,876 people in mid-November of that year. Of these, Barnstable Town with only 19% of Cape population accounted for approximately 25% of the firms, 35% of the annual payroll and 34% of Cape employment.

The seven major Division of Employment Security categories are discussed in the following paragraphs to show relationship between the Town and County (Table 1). In all employment categories, Barnstable had more reporting establishments than any other Cape Cod town (Tables II and III).

CAPE COD EMPLOYMENT COMPONENTS

ATWOOD & BLACKWELL, PLANNERS, BOSTON

Scale in miles 0 1 2 4 N



Agriculture, Forestry and Fishing

With 28 firms, Barnstable accounted for 27% of all Cape Cod firms, 26% of the employees and 23% of the payroll. Provincetown and Falmouth had a few more employees and slightly higher payrolls.

Construction

With 95 firms Barnstable accounted for 21% of all Cape Cod construction, 13% of all employees and 17% of all payroll. Only Falmouth had more employees and higher payrolls.

Manufacturing

With 14 firms, Barnstable accounted for 19% of all firms, 32% of all employees and 28% of all Cape Cod manufacturing payroll. Falmouth with fewer firms and fewer employees had a slightly higher payroll. This is due to variation in Barnstable manufacturing employment; the November reporting month showing a high Barnstable Township employment figure which decreases considerably during the first six months of the year.

Transportation, Communications, and Other Public Utilities

With 30 firms, Barnstable accounted for 29% of all firms, 80% of all employees and 84% Cape Cod payroll in this category. Barnstable Township is the operating base for the large utilities, telephone, electric and gas companies, which serve the Cape and report out of Barnstable.

Wholesale and Retail Trade

With 225 firms, Barnstable accounted for 25% of Cape Cod firms, 36% of Cape Cod employees and 38% of all payroll. Employment in wholesale and retail trade totaled more than twice that of Falmouth, the second largest employer in this category. Approximately 18 of 47 Cape Cod wholesale firms were located in Barnstable Township.

Finance, Insurance and Real Estate

With 26 firms, Barnstable accounted for 22% of all Cape Cod and 30% of employees and annual payroll. The town had more than twice the number of employees and twice the payroll of Falmouth or Yarmouth in Finance, Insurance and Real Estate.

Service Industries

With 171 firms, Barnstable had 28% of Barnstable County firms, 27% of employment and 28% of payroll. Falmouth with some 60 less firms had a few more employees but less total payroll.

2. Trade Comparisons

That Barnstable is the commercial center of the Cape is further attested by the last U. S. Census of Business Reports of 1958. Three categories of commercial activity are reported, Wholesale Trade, Selected Services and Retail Trade.

Wholesale Trade

Of 71 Barnstable County wholesale firms, 33 were located in Barnstable Township. In mid-November, 1958, these firms, with 204 employees (52% of total County employment) accounted for $12,214,000 in sales; over 52% of total County sales. Of 33 wholesalers, 25 were merchant wholesalers, accounting for $8,563,000 of total wholesale dollar volume (69% of County sales).

Selected Services

This category includes hotels, motels, personal services, business services, repair services, theatres, amusements and recreation services. Of the 906 firms reported in the County in 1958, 171 or nearly 19% are located in Barnstable. These firms employing 368 workers in mid-November, accounted for $3,878,000 in receipts, over 19% of total receipts for the County. Although the Town of Barnstable had the greatest number of firms, Falmouth had 73 more employees and $173,000 more in receipts. Of 171 establishments in Barnstable Township, only 105 reported payrolls, indicating a large number(66)single-

person operations. The 66 single-person operations accounted for only $340,000 in receipts or less than 10% of the Town total.

Retail Trade

1317 retail establishments were reported in Barnstable County. 283, nearly 22%, were located in the Town of Barnstable. These firms, with 1,364 paid workers (over 29% of the county total) accounted for $33,200,000 in sales or over 29% of total Barnstable county sales. Falmouth, with $20,500,000 in sales, had over 100 less firms and over 500 less employees.

TABLE I

EMPLOYMENT AND PAYROLLS IN BARNSTABLE
BY MAJOR CATEGORIES IN 1958

INDUSTRY	No.of Firms	% of County	Annual Payroll (000's)	% of County	Nov.1958 Employees	% of County	Distribution by Employees	% by County
Agriculture & Mining	28	29%	$ 261	23%	95	26%	2.8%	3.7%
Construction	95	21%	1,424	17%	288	13%	11.5%	21.8%
Manufacturing	14	19%	737	28%	239	32%	7.1%	7.5%
Trans., Comm., & Utilities	30	29%	3,665	84%	827	80%	24.4%	10.5%
Wholesale & Retail Trade	225	25%	4,555	38%	1,211	36%	35.8%	33.9%
Finance, Ins. & Real Estate	26	22%	583	30%	170	30%	5.0%	5.8%
Service Industry	171	28%	1,847	28%	454	27%	13.4%	16.8%

Source: Massachusetts Division of Employment Security

TABLE II

EMPLOYMENT AND PAYROLLS IN BARNSTABLE COUNTY
BY TOWNS - 1958

TOWNS	No. of Firm	Annual Payroll (000's)	No. of Empl. Nov. 1958
BARNSTABLE	589	$ 13,072	3384
Bourne	202	2620	800
Brewster	37	361	101
Chatham	154	1826	479
Dennis	173	1616	383
Eastham	28	117	37
Falmouth	383	7461	1968
Harwich	152	1731	478
Mashpee	9	82	23
Orleans	116	1718	515
Provincetown	189	2138	528
Sandwich	63	1703	446
Truro	48	351	110
Wellfleet	48	322	95
Yarmouth	187	2130	529
Total	2378	37,248	9876

Source: Massachusetts Division of Employment Security

TABLE III

NUMBER OF ESTABLISHMENTS IN BARNSTABLE COUNTY BY MAJOR CATEGORIES BY TOWNS FOR 1958

TOWNS	Agr., For. & Fish.	Contract Constr.	Mfg.	Trans., Comm. & P.U.	Whol.& Retail	Fin., Ins., & R.E.	Service	Total
BARNSTABLE	28	95	14	30	225	26	171	589
Bourne	2	35	9	11	99	8	38	202
Brewster	2	7	-	2	12	1	13	37
Chatham	10	37	3	8	57	9	20	154
Dennis	4	48	3	4	64	15	35	173
Eastham	-	10	1	1	8	2	6	28
Falmouth	16	89	11	19	120	19	109	383
Harwich	7	33	7	9	54	6	36	152
Mashpee	-	3	-	2	3	-	11	9
Orleans	2	22	3	4	49	6	30	116
Provincetown	26	14	7	7	91	8	36	189
Sandwich	1	13	3	-	29	2	15	63
Truro	1	7	2	-	17	3	18	48
Wellfleet	-	13	1	1	19	3	11	48
Yarmouth	3	30	9	4	64	11	66	187
TOTAL	102	456	73	102	911	119	615	2378

Source: Massachusetts Department of Commerce

SECTION III EMPLOYMENT MAGNITUDES AND TRENDS IN BARNSTABLE TOWNSHIP

1. The previous section compared Barnstable Township employment data with the County and other Cape Cod towns. This section examines employment trends within the Town itself.

Number of Firms

590 Barnstable firms reported to the Massachusetts Division of Employment Security in 1958, an increase of 200 firms over 1948. Wholesale and retail firms were the 1958 leader with 205 firms reporting, followed by the service industries and contract construction, (Table IV). The 590 firms reported 3384 employees in November of 1958, an increase of over 1000 employees since 1948. (Table V).

Employment Comparisons

Of all Barnstable Township employment, one-third is in Wholesale-Retail trade. Transportation, communications and other public utilities are second, followed by the Service Industries and Contract Construction. Percentage distribution of employment by major categories is shown in Table VI.

Total Payroll

Wholesale-Retail trade, largest employment category, had the highest payroll, over 1/3 of the total $13,071,000 reported. This group was followed by Transportation-

Communications, other public utilities, and the Service Industries and Contract Construction trades (Table VII).

Variations in Seasonal Employment

By employment categories, the Service Trades are most sharply affected by seasonal variation, fluctuating from a February low of 355 employees to a July high of 1152. Percentagewise, the Service trades have 21.7% of all employment in July and only 12.5% in November. Wholesale and retail trade also doubled employment between the low and high months, from 1095 to 2135. Transportation-Communications and other public uitlities are comparatively stable. (Table VIII).

Employment Trends

From 1948 through 1958, the number of reporting firms increased 50% from 390 to 590. November employment during the same period increased 42% from 2378 to 3384. The average number of employees per firm declined from 6.1 to 5.7 persons during this same period. Of the 200 firms locating in Barnstable since 1948, 67 were service type firms, 48 were wholesale-retail types and 49 were not classified. Within the latter group are motels. The only categories where the number of firms decreased were manufacturing, with 4 less and Finance, Insurance and Real Estate with 3 less.

Major employment gains occurred in all categories except contract construction and agriculture which had 39 and 9 less employees respectively (Table V). Wholesale-Retail had the greatest employment gain, adding 455 workers.

Transportation-Communication and other public utilities added 212 workers. The Service Industries added 179 workers during the ten-year period.

Proportionately, the 1958 seasonal variations were basically the same as variations in 1948.

2. Analysis of Trends in Individual Barnstable Township Employment Categories

Agriculture, Forestry and Fishing

November employment in this group has declined from 91 in 1948 to 82 in 1958. Strangely, the number of firms has increased from 15 to 26. Seasonal employment is noticeable, but with the exception of the local shellfish industry supplying local restaurants, it is not directly associated with the vacation season aspects of Barnstable economy. Employment is lowest during the first three months of the year and rapidly increases to a peak in June. Slight decline takes place during the summer, then declines more rapidly during the autumn and winter.

Barnstable decline in agricultural employment follows regional and national trends, and is expected to continue. Small farms are increasingly less productive. Increasing demand for subdivision land is helping to push the Barnstable farmer out of farming.

Employment in the shellfish industry appears to vary depending on the available supply. Careful conservation and propagation methods could hold employment at present levels.

Contract Construction

Overall employment in the construction trades has decreased slightly since 1948, but has been accompanied by an increase in the number of firms. In November, 1948, 72 firms employed 418 construction people. In In 1958, 88 firms employed 379 construction workers. Comparing peak months of these two years showed 562 people employed in May of 1948 and 424 in June of 1958. Seasonal variation in Barnstable construction employment follows that of the building trade as a whole in the New England area. The first three months and the last two months have the lowest employment while May, June and July have highest employment.

Employment in the construction trades is dependent upon many factors; mortgage capital, local and regional disposable income, leisure time, retirement ages, non-residential construction prospects. It is expected that employment within this category should increase in the next few years, as more houses were built in Barnstable during 1959 than in any year since 1950. The planners expect a continued high level of construction activity in the years ahead.

Manufacturing

Barnstable Township manufacturing employment from 1948-1958 has varied. It declined from 1948 to 1954, then increased again until 1958. However, 1958 had fewer

employees over the twelve-month period than 1948. Seasonal employment changes are noticeable. Generally, employment is low and stable during the first six months of the year, increasing in July with a high plateau in September, October and November. December employment is normally higher than during the first six months.

Shipbuilding (and repairs) and candle manufacturing are the two major Barnstable manufacturing industries and employ few people. The former employed over 30 workers and the latter over 150 in November 1958.

Transportation, Communications & Other Public Utilities

In November 1958, 29 firms reported 824 employees, an appreciable increase of 16 firms and 212 employees over 1948. Since 1952 employment has been relatively stable. Maximum monthly employment within this category normally occurs in June, July and August reflecting the influx of summer residents and tourists. Employment fluctuation between the low month and the high month was only 18%.

Within the utilities classifications, the telephone company employs the largest number of workers, followed by the electric company and the gas company.

In transportation, twelve trucking firms employ

between 87 and 123 workers, the larger figure in July. Two water transportation companies also operate in Barnstable. Other industries in this group include water supply system, taxicabs, air transportation and service. Each had less than 20 employees in July, 1958. Nominal employment increases are expected from increasing population and the expanding vacation industry.

Wholesale & Retail Trade

In November 1958, 206 firms reported 1197 employees, an increase of 48 firms and 455 employees, over 1948. Employment in wholesale and retail trade increased steadily from 1948 through 1956 but decreased slightly in 1958. Employment strongly reflects the summer vacation industry. In February 1958, there were 1095 reported jobs. During July, employment almost lowered to 2135 workers. Heaviest seasonal employment variation expectedly occurs in retail categories. Barnstable wholesale trade had only an insignificant ten-worker fluctuation in 1958. Monthly employment magnitudes show first four months relatively stable. A slight increase (50 to 100) jobs is noticed in May, followed by a sharp rise (300-400) in June and an even sharper rise (400-500) in July. August employment falls slightly below July, September employment decreases by 300-400 jobs, October by 400-500, with another 50-100 drop

in November. December employment levels yearly are slightly above those of the first four months.

Finance, Insurance and Real Estate

In November 1958, the 27 firms in this category reported 170 employees. This represents a 3-firm decrease since 1948, but employment rose by 61 employees. Monthly variations in employment (Table IV) again reveal the impact of the summer vacation trade. The first four-months and the last two months have lowest employment. Employment increases slightly in May, rises sharply in June and July, and reaches a peak in August. August employment is nearly 60% over January. Employment decreases rapidly in September with minor decreases in October and November. Employment in this grouping should continue to increase in the future as a function of population increase and vacation trade enlargement.

Service Industries

The service industries cover a broad group of functions including personal services, hotels, motels and lodging places, automobile repair services, amusements, medical services, legal services, educational services and other similar functions.

In November 1958, 153 firms reported 424 employees, an increase of 67 firms and 179 employees over November 1948. Proportionately, the service industries are more heavily affected by seasonal factors than any other Barnstable employment category. July 1958 employment was nearly 225% over February. In 1958, the first four and last two months had the lowest employment. High employment occurs in June, July and August with rapid decrease in September and October employment. Most affected by seasonal changes are lodging places, primarily hotels where high month employment is 18 times low month employment. High to low month ratio for camps are 7 to 1 while beauty and barber shops increase by over 2 to 1 and sports activities to nearly 3 to 1.

Steadily increasing service trade employment in each two-year year period since 1948 is noticed, with the increase in 1956 and 1958 being less than prior years. Proportionately higher increases in the service industries are expected in the future. Nationally, this is one of the most rapidly expanding employment categories. Barnstable has significant opportunities for large-scale increase in service employment both as a function of growing population and from summer trade increase.

3. Conclusions

The Barnstable Township economic base is primarily oriented around consumer spending for retail and wholesale goods and services. Little "basic" employment, i.e. manufacturing is present. Barnstable lives on the vacation industry and income payments from off-Cape and retired people. As such employment and payrolls are subject to wide fluctuations. This is not as damaging as might be imagined because much of the summertime employment increase is taken up by off-Cape people and young people not in the Cape Cod labor force in the winter.

While Cape Cod and Barnstable Township will in large measure continue to have employment fluctuations for the foreseeable future, Town economy could be enhanced by specific actions which 1) broaden the employment base, 2) increase Hyannis year-round and summertime trade, and 3) lengthen the season. These goals are discussed in the next sections.

TABLE IV

NUMBER OF ESTABLISHMENTS IN BARNSTABLE TOWNSHIP
BY MAJOR CATEGORIES FOR SELECTED YEARS

INDUSTRY	1958	1956	1954	1952	1950	1948
Agriculture, Forestry and Fishing	26	26	26	20	18	15
Contract Construction	88	94	91	93	79	72
Manufacturing	11	12	12	11	12	15
Transportation, Communication and Other Public Utilities	29	24	20	16	15	13
Wholesale and Retail Trade	206	209	203	199	191	158
Finance, Insurance, and Real Estate	27	27	27	31	31	30
Service	153	138	125	113	105	86
Establishments Not Elsewhere Classified	50	2	1	1	1	1
Total	590	532	505	484	452	390

Source: Massachusetts Division of Employment Security

TABLE V

NUMBER OF EMPLOYEES IN BARNSTABLE TOWNSHIP
BY MAJOR CATEGORIES FOR SELECTED YEARS*

INDUSTRY	1958	1956	1954	1952	1950	1948
Agriculture, Forestry and Fishing	82	90	113	106	100	91
Contract Construction	379	390	407	404	464	418
Manufacturing	211	201	229	183	167	159
Transportation, Communication and Other Public Utilities	824	892	811	591	715	612
Wholesale and Retail Trade	1197	1249	1172	1087	1017	742
Finance, Insurance, and Real Estate	170	155	148	131	128	109
Service	424	378	365	307	315	245
Establishments Not Elsewhere Classified	97	2	1	3	2	2
Total	3384	3357	3246	2812	2908	2378

Source: Massachusetts Division of Employment Security

*Month of November

TABLE VI

Percentage Distribution of Employees
by Major Categories 1948 and 1958

INDUSTRY	DISTRIBUTION BY EMPLOYEES			
	1958		1948	
	July	Nov.	July	Nov.
Agriculture & Mining	2.4	2.4	3.5	3.8
Construction	7.9	11.2	13.4	17.6
Manufacturing	2.8	6.2	4.8	6.7
Trans., Comm., & Utilities	17.6	24.4	19.4	25.7
Wholesale & Retail Trade	40.2	35.4	33.0	31.2
Finance, Ins. & Real Estate	4.2	5.0	3.3	4.6
Service Industry	21.7	12.5	22.5	10.3
Not Elsewhere Classified	3.2	2.9	.1	.1

Source: Massachusetts Division of Employment Security

TABLE VII

ANNUAL PAYROLL IN $000'S BY MAJOR CATEGORIES OF FIRMS LOCATED IN BARNSTABLE FOR SELECTED YEARS 1948-58

INDUSTRY	1958	1956	1954	1952	1950	1948
Agriculture, Forestry and Fishing	239	231	248	230	224	201
Contract Construction	1393	1370	1266	1185	1135	1044
Manufacturing	545	503	422	319	321	342
Transportation, Communication and Other Public Utilities	3658	3663	2922	2376	1976	1630
Wholesale and Retail Trade	4658	4392	3901	2917	2660	2067
Finance, Insurance, and Real Estate	585	533	474	406	347	278
Service	1767	1528	1310	1042	710	718
Establishments Not Elsewhere Classified	226	6	6	7	2	1
Total	13071	12226	10549	8482	7375	6281

Source: Massachusetts Division of Employment Security

TABLE VIII

VARIATIONS IN EMPLOYMENT IN BARNSTABLE

BY MAJOR CATEGORIES BY MONTHS FOR THE YEAR 1958

INDUSTRY	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Agriculture, Forestry and Fishing	52	53	51	110	124	136	128	120	104	94	82	54
Contract Construction	293	283	328	373	415	424	422	407	394	382	379	335
Manufacturing	124	128	130	130	130	137	151	187	216	229	211	161
Transportation, Communication and Other Public Utilities	806	790	789	845	874	908	931	916	884	839	824	809
Wholesale and Retail Trade	1147	1095	1115	1188	1254	1693	2135	2081	1690	1262	1197	1197
Finance, Insurance, and Real Estate	145	152	155	162	172	201	221	230	186	176	170	171
Service	359	355	371	425	462	831	1152	1135	715	458	424	389
Establishments Not Elsewhere Classified	8	10	10	45	69	91	160	159	114	106	97	74
Total	2934	2866	2949	3278	3500	4421	5300	5235	4303	3546	3384	3190

Source: Massachusetts Division of Employment Security

SERVICE INDUSTRIES

TABLE IX

Employment by Months by Years for Major Industries

	Number of Establishments	Number of Employees											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hotels													
1958	13	22	23	24	36	57	245	409	395	186	70	69	40
1956	14	34	38	39	38	52	248	397	379	185	49	35	31
1954	15	47	42	46	54	118	266	420	428	257	75	50	45
1952	16	37	38	42	50	81	333	494	483	314	73	49	39
1950	13	36	42	46	57	100	252	446	446	266	85	55	66
1948	8	33	32	36	34	54	266	326	328	204	58	43	35
Camps													
1958	18	15	14	11	23	29	60	71	73	48	20	13	14
1956	13	5	5	8	21	32	43	57	57	49	26	15	14
1954	8	14	10	8	12	23	26	47	45	41	23	12	8
1952	7	4	4	4	10	21	26	30	32	26	20	11	8
1950	4	17	17	16	18	16	24	26	25	21	13	8	7
1948	5	13	14	15	17	20	24	23	24	24	12	9	10
Barber & Beauty Shops													
1958	15	23	20	20	25	24	36	41	37	29	20	19	20
1956	15	24	24	23	28	28	42	42	40	35	25	25	25
1954	15	14	13	14	19	22	26	32	31	29	24	22	19
1952	13	18	17	15	16	19	26	29	29	25	18	19	14
1950	15	15	15	15	19	22	28	35	31	32	26	23	19
1948	11	11	11	12	14	17	23	22	23	21	13	12	11

SERVICE INDUSTRIES (Continued)

Employment by Months by Years for Major Industries

	Number of Establishments	Number of Employees											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sports (Golf Clubs, Swimming Pool, Riding Academy, etc.)													
1958	6	31	29	38	44	45	48	80	82	54	39	31	32
1956	6	29	29	31	36	38	40	75	75	51	32	32	29
1954	6	23	20	30	39	40	49	70	70	5	36	38	32
1952	6	17	18	19	27	29	54	60	64	56	26	24	20
1950	6	15	14	13	19	23	36	59	59	32	26	22	21
1948	6	21	20	21	26	28	36	54	55	37	32	19	14
Professional Engineering and Architectural Services													
1958	7	28	28	29	28	27	26	29	33	34	32	32	31
1956	7	32	30	32	34	37	30	28	32	36	35	34	31
1954	6	28	27	28	28	26	26	27	25	25	25	29	30
1952	6	22	20	21	22	17	21	22	23	20	26	27	27
1950	4	11	11	12	14	15	15	16	16	15	17	19	19
1948	2	*											
Civic, Social and Fraternal Associations													
1958	8	21	21	23	27	28	56	146	140	64	27	23	24
1956	8	30	34	32	25	29	56	147	143	102	28	27	22
1954	9	21	19	21	20	26	52	138	140	91	25	19	19
1952	8	22	21	20	25	25	56	126	130	82	23	19	19
1950	6	15	15	15	17	20	39	127	127	30	19	16	14
1948	5	13	13	15	24	26	113	141	120	107	21	17	15

*Withheld to avoid disclosure

RETAIL TRADE

TABLE X

Numbers Employed by Months by Years for Major Industries

	Number of Establishments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lumber & Building-Material Dealers													
1958	4	82	79	75	76	80	88	91	92	90	91	84	79
1956	4	85	84	82	83	80	85	88	86	85	82	91	89
1954	4	69	66	68	73	73	73	83	83	77	87	75	95
1952	4	68	70	67	61	65	70	77	61	66	68	72	71
1950	4	56	54	55	55	56	60	62	63	62	64	66	66
1948	3	46	68	46	48	46	52	54	53	52	50	47	48
Grocery Stores													
1958	9	151	150	152	158	158	213	357	354	281	161	154	146
1956	13	209	215	217	242	251	277	404	392	332	239	236	225
1954	14	181	183	191	197	254	343	408	404	331	231	218	201
1952	13	175	176	154	246	254	264	259	251	252	255	257	258
1950	15	163	164	164	145	145	150	239	237	230	177	175	176
1948	15	157	157	163	195	198	207	207	197	197	172	172	176
Dairy Product Stores & Milk Dealers													
1958	4	38	37	37	37	40	76	94	89	70	42	39	36
1956	3	38	38	38	38	42	85	91	91	79	45	41	45
1954	3	37	40	41	41	53	78	93	91	77	42	39	37
1952	3	30	30	31	31	37	70	31	76	60	37	35	33
1950	2	*											
1948	2	*											

* withheld to avoid disclosure

RETAIL TRADE (Continued)

	Number of Establishments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Men's & Boys' Clothing & Furnishings Stores													
1958	3	34	31	30	35	36	42	45	48	41	34	34	44
1956	4	26	24	23	24	30	38	40	39	38	33	31	40
1954	3	23	23	23	26	28	31	33	36	32	28	26	34
1952	3	3	3	2	18	18	27	26	25	23	22	22	27
1950	2	*											
1948	1	*											
Women's Ready-to-Wear Shoes													
1958	5	22	18	18	19	22	34	39	39	29	33	27	28
1956	2	*											
1954	6	16	12	12	18	25	37	47	46	40	31	18	24
1952	6	15	10	12	17	18	33	39	42	33	28	14	18
1950	5	10	9	8	12	11	14	25	25	24	20	11	17
1948	2	*											
Furniture, Home Furnishings & Equipment													
1958	10	30	29	28	31	31	35	41	43	34	32	30	32
1956	8	29	27	26	28	27	28	36	34	29	28	27	30
1954	9	24	25	25	27	27	29	36	35	27	26	27	29
1952	6	20	19	21	22	24	26	24	23	22	25	25	27
1950	6	32	28	32	22	24	26	26	21	21	21	22	22
1948	6	16	13	15	18	20	21	23	22	23	26	26	26

* withheld to avoid disclosure

	Number of Establishments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail Drug Stores													
1958	7	62	62	61	57	62	71	75	79	66	64	59	58
1956	7	70	72	72	78	78	82	101	98	77	79	75	74
1954	6	58	56	58	58	63	60	77	84	70	59	56	58
1952	6	42	43	44	45	45	51	60	60	61	54	53	52
1950	4	26	28	28	27	29	30	42	38	38	36	35	31
1948	5	26	26	27	28	29	34	44	45	35	31	27	25
Hardware & Farm Implements													
1958	7	27	29	28	31	33	35	35	35	33	34	29	32
1956	7	28	30	31	34	38	44	39	40	30	27	26	25
1954	7	26	27	26	28	32	35	36	31	29	29	28	27
1952	6	23	20	23	26	26	28	28	28	24	21	22	25
1950	5	20	21	22	25	30	35	37	34	30	26	27	28
1948	5	11	12	13	17	14	18	14	16	15	17	18	18
Electrical & Gas Household Appliances Stores & Radio Dealers													
1958	7	28	26	29	29	29	30	14	14	14	14	14	14
1956	8	27	28	27	28	26	29	33	32	29	26	27	28
1954	6	26	25	25	25	26	29	29	29	28	26	26	26
1952	5	24	24	24	22	22	22	25	24	23	24	24	25
1950	3	18	19	19	18	17	21	20	19	20	20	18	17
1948	3	18	17	18	16	28	22	16	16	15	16	14	14

RETAIL TRADE (Continued)

	Number of Establishments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Liquor Stores													
1958	7	23	22	22	23	23	25	33	34	27	28	27	26
1956	7	21	21	23	23	25	28	28	30	27	26	26	25
1954	7	19	21	21	23	21	24	27	29	27	23	21	21
1952	6	11	11	11	13	13	15	22	21	19	26	14	12
1950	7	13	13	11	12	14	17	20	21	19	27	21	16
1948	6	10	11	11	15	16	18	17	16	17	14	14	15
Miscellaneous Retail Food													
1958	3	15	13	16	16	20	38	39	36	29	19	17	17
1956	5	13	14	15	19	24	48	66	67	37	23	18	20
1954	5	17	15	19	18	21	37	47	51	42	21	16	18
1952	4	14	13	14	19	22	35	32	34	37	26	19	18
1950	4	15	15	14	11	14	24	38	35	33	20	18	18
1948	4	16	16	16	16	20	26	37	39	33	20	14	18
Motor Vehicle Dealers - New & Used Cars													
1958	9	128	106	126	114	122	125	132	125	122	126	130	120
1956	10	128	128	129	130	130	131	131	132	130	129	135	127
1954	9	122	120	121	124	122	126	130	130	124	132	127	126
1952	10	125	125	117	136	134	132	138	134	127	123	118	119
1950	10	129	122	117	123	124	139	139	136	125	118	123	114
1948	*	*											

* withheld to avoid disclosure

RETAIL TRADE (Continued)

	Number of Establishments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Fuel & Ice Dealers													
1958	5	51	51	51	50	49	51	51	50	50	48	48	50
1956	6	61	59	58	58	55	54	58	57	53	55	55	57
1954	7	55	55	57	55	56	59	60	59	57	62	63	58
1952	9	57	55	56	52	53	57	68	67	61	59	55	59
1950	9	60	60	61	63	64	69	76	75	68	74	78	62
1948	10	61	60	59	67	67	76	78	85	72	73	70	62
Retail Trade Not Elsewhere Classified													
1958	30	89	82	77	84	86	94	121	121	99	90	86	95
1956	31	71	67	68	76	79	99	112	115	101	92	87	99
1954	26	55	55	53	65	67	71	95	92	74	61	61	63
1952	29	56	52	54	52	53	59	87	85	64	48	46	49
1950	26	36	39	37	44	46	50	61	62	63	55	60	67
1948	21	36	30	31	39	37	46	57	58	49	39	35	40
Eating & Drinking Places													
1958	38	100	101	108	145	165	361	608	569	384	175	150	138
1956	40	83	79	84	121	131	274	607	562	372	168	126	109
1954	43	97	92	88	108	168	356	597	587	388	155	111	79
1952	40	86	79	82	99	138	357	696	664	459	135	109	88
1950	39	95	88	84	116	162	258	494	451	368	181	137	134
1948	23	81	75	76	94	123	166	310	279	182	95	76	78
Retail Filling Stations													
1958	22	37	35	39	41	41	55	75	74	56	44	39	31
1956	21	33	33	33	37	38	42	67	62	61	51	45	37
1954	19	26	23	22	23	22	26	42	44	39	31	27	26
1952	20	25	24	24	25	27	30	47	47	33	38	30	27
1950	19	22	19	20	25	26	30	34	40	37	28	24	22
1948	15	21	18	21	26	25	36	35	35	34	23	19	20

SECTION IV HYANNIS DOWNTOWN TRADE

1. Introduction

Barnstable Township retail trade is concentrated to a large degree in and around the Hyannis locus. This grouping is the largest Cape Cod retail center; its trading area extends from the Cape Cod Canal to Provincetown. The major long range concern is to keep this area, particularly the downtown core, alive and vital through a workable overall development plan commensurate with the potentials. This report section outlines the major economic goals underlying our physical plans for downtown improvement.

Regionally, Cape Cod retail trade is growing faster than Barnstable Township retail trade (from $60,303,000 in 1948 to $112,821,000 in 1958, an 87% Cape gain where Barnstable had a 61% gain. This was to be expected as retail centers expand elsewhere on Cape Cod. However the Cape can only support one center offering the diverse range and quality of goods demanded at a major center. Hyannis, with approximately 280,000 square feet of retail sales area in downtown, is now the dominant Cape Cod center as all our statistics indicate. Can this dominance be continued?

In 1948 Barnstable retail sales totaled some $20,600,000. In 1958 retail sales had reached $33,200,000. Projection at this rate could raise Barnstable Township retail sales to an overall $45,000,000 by 1968. Of this figure some $30,000,000 or more

could be concentrated directly in the downtown and the remainder distributed around downtown along Route 28 on Barnstable Road and throughout the various villages, we estimate. Of the $12,000,000 increase forecast, some $8,000,000 could be downtown. Achieving a trade increase to these levels and beyond depends upon better exploitation of summer trade potentials and physical changes to permit downtown expansion and redevelopment, on a year-round basis.

2. Summer Trade

The importance of summer trade to Hyannis cannot be overlooked. Employment statistics here and in earlier sections have illustrated wide seasonal fluctuations - grocery store employment more than doubles in the summer, eating and drinking place employment is six times as large, hotel employment is 35 times larger, barber shops and beauty shops employment doubles, recreation employment triples.

Equally indicative of the great part played by the tourist are monthly Hyannis sales volumes (based on personal interview) which are widely divergent when compared to national averages. For example, on a national average, about 7.0% of the apparel business, both men's and women's is done in August. In Hyannis 14%, or twice the national average is done in August. In the field of general merchandise, which includes 5&10¢ stores and department stores, the national average for July, 1959, was slightly over 7.3% compared to Hyannis' average of over 15%. National averages show December to be the high month, yet in Hyannis the high month is always during the summer. Our interviews reveal that approximately 40%

of Hyannis trade is done in the three summer months. Nationally, only 24% is done in the same period. We estimate that some $13,000,000 of total year round sales is accomplished during the summer, of which some $10,000,000 is derived from non-residents.

While difficult to predict, every indication points to increased tourist activity and spending on Cape Cod. Yet, as pointed out in downtown plan and land-use analysis, Hyannis, while increasingly more commercial, is increasingly less able to exploit its summer trade potentials. Though new stores are being constructed, they tend to reflect year round shopping demand, not specific or unique summer and vacation shopping needs. The west end, once a high-calibre area for this purpose has become tawdry in recent years and choked with traffic. With expected increases in summer trade, Barnstable Township could support a major summer shopping area. This center should be in downtown where it can complement the year round center and should be based on redevelopment of the west end.

Such a center could generate over $4,000,000 in summer trade we believe and support at least 100,000 square feet of retail sales area at its inception. If accomplished along lines recommended in the plan diagram these figures could be revised sharply upward in future years.

3. Year Round Shopping

The greatest danger to the Hyannis present downtown core is development of a major year-round-and-summer competing shopping area elsewhere in Barnstable Township. While downtown Hyannis may not experience an actual dollar trade decline, the planners believe such development elsewhere would damage both downtown ability to grow and modernize, and would limit the potential size of the new competitive area. For this reason all plan recommendations point toward continuance of downtown as the major center with further recommendations on physical improvements to guarantee its dominance.

Downtown is large enough to support all the retail functions it conceivably could be called upon to support over the foreseeable future, if landlords, merchants and town government put forth a concerted effort to physically improve downtown.

With such improvements, a conservative estimate of 1968 retail trade would place over $30,000,000 in downtown, an increase of some $8,000,000 over 1958 figures. This trade level could support some 400,000 square feet of first floor retail sales area, including summer shops, and still maintain a 3-1 ratio for parking. Undoubtedly there will always be non-retail sales uses in downtown such as public buildings, service clubs, churches and cemeteries. Even with all present non retail uses, the potential retail sales area within the building envelopes on the plan diagram and not including projected retail sales on South Street, would require over $50,000,000 of retail sales for support. Assuming that downtown redevelopment preserves Hyannis' dominant trading position, this potential trade level would not be reached before 1980.

Conclusions

Through circulation, parking and redevelopment improvements the Hyannis downtown core can continue as the dominant Cape Cod retail center. Retail trade increase in future years will support such redevelopment. There is adequate ground space in downtown to justify exclusive continuance of such uses in Hyannis alone.

To implement the plan, the Town needs a parking authority or similar instrument to undertake the parking improvements recommended by the plan. Further, a committee of Downtown merchants and townspeople should be appointed to carry out other physical enhancement recommendations.

SECTION V INDUSTRIAL POTENTIALS

I. Introduction

This report section examines Barnstable industrial development potential from the standpoint of industrial location criteria. It attempts to determine and dimension exactly what Barnstable has to offer in the highly competitive industrial development battle. Our conclusions, based both on accepted development factors and the physical and social characteristics of Barnstable, lead us to believe that Barnstable cannot expect to achieve any significant manufacturing development. On the other hand, with concerted efforts by the community, we believe that Barnstable can attract a major research oriented organization to the Hyannis area. Initially, this would not provide large Barnstable employment increases, because most of the trained personnel would at first come from off the Cape. In the long run, it would offer significant employment increases for Barnstable young people desiring technical employment. The community college could be of tremendous dual assistance: 1) providing impetus for a Barnstable research location because of a guaranteed supply of trained technical help, and 2) stopping the flow of young people out of Barnstable and off Cape Cod.

II. Existing Patterns in Manufacturing

Manufacturing employment in Barnstable accounted for only 6% of the reported labor force in November, 1958.* This was a decrease of nearly 1% since 1948 mainly because other employment categories were increased. Average monthly manufacturing employment was also below that of 1948. Peak 1958 manufacturing employment occurred in October with 229 reported employees. This is over 100 more workers than employed in January due primarily to the seasonal employment by the candle manufacturers.

Shipbuilding and repairs, and candle manufacturing are the two major Barnstable manufacturing industries. The former employed over 30 workers in November 1958 and the latter over 150.

Colonial Candle Co., largest Barnstable manufacturing firm, employs between 50 and 150 workers, reaching the high figure in the fall and the low in January. Old Harbor Candle, the other candle manufacturer in Barnstable, employs about 25 workers. Expansion plans, in number of employees and physical facilities, have been expressed by both firms, although both have limited sites on which to expand present facilities. Neither firm has expressed any desire to leave Barnstable.

The Crosby Yacht Building and Storage Co., Inc. employs about 30 workers year-round, building boats in the winter and repairing and servicing boats in the summer. A marina is operated by the

* Those firms reporting to the Massachusetts Director of Employment Security.

firm and if the program for the dredging of Cotuit Harbor is ever carried out, the marina will be expanded. No plans for expansion of boat building have been expressed by the firm.

Electro-Contacts, in Osterville, employs only eight people at present. Producing electronic equipment, one of the fastest growing industries in the country, expansion is possible and space is available for some increased employment at the existing facilities.

Of the four mentioned firms, only the boat yard is located naturally, in the sense that it couldn't just as well be located elsewhere. The others are located where they are for personal reasons or because they originated there, but their locations satisfy few, if any, of current industrial location factors.

Warehousing

This category includes wholesale distribution. From observation and study, Barnstable appears to have as large a complex as could be expected based on present Cape Cod population. However, as Cape Cod continues to grow in population, expanded warehousing and wholesale distribution areas will have to be planned for Barnstable. The Town's central geographic and population position makes it the natural area on Cape Cod for these activities. Highway planning is importantly related to expansion plans because of the extreme importance of motor transport on Cape Cod.

Research and Development

Only one small firm, Electro-Contacts, which is primarily engaged in manufacturing electronic components could be classified in this field. This firm produces custom made contacts used in computers and other electronic equipment.

III. Future Industrial Potential

Industries locate where economic factors are most favorable. In order for Barnstable to attract new industry or persuade outside industry to locate here, facts showing the Barnstable economic advantages and disadvantages must be clearly and honestly presented.

The present industrial site north of the airport appears to offer the best location for industry on Cape Cod. We do not see any other Barnstable areas where the community might prudently attempt industrial development. The major factors in industrial plant location are discussed below in relation to Barnstable and, where applicable, more specifically to the proposed industrial site.

A study done in 1947 by the Area Development Division of the U. S. Department of Commerce entitled, "Basic Industrial Location Factors" lists thirteen major industrial location factors. In addition, 75 major industrial groups rated each factor as most important or unusually important when seeking a new location. Each factor is discussed in order of importance, based on the number of times it was mentioned as a "most important" factor.

Distribution Facilities: This broad category includes storage and warehousing, transportation and terminal facilities, financial institutions and financing service. With the exception of the Financial Institutions, Barnstable at present has little to offer industry in the way of warehousing and terminal facilities. A possible exception is the airport more fully discussed in a later section of the report.

Tax Structure: Although Massachusetts has a reputation in many other areas of the country for having a tax structure unfavorable to industry, this would not seem true for a Barnstable location. There is no local property tax on manufacturing machinery in Massachusetts. Local taxation includes mainly real property land and buildings, not machinery and inventory. Thus Barnstable, with a low tax rate ($45.00 in 1959) and a low ratio of assessment to market value (33%) could prove to be an extremely economical location from a tax standpoint for specific types of industries.

A 1959 study "State and Local Taxation of Industry" compared areas in Massachusetts to areas in other states. Although comparisons were not made for Barnstable, by using available data a comparison was made by the planner of Barnstable and other towns listed in the survey. This showed that a corporation, locating in Barnstable, could have lower taxes than in any of the other Massachusetts towns and also lower than many of the towns and cities outside Massachusetts that were listed.

Transportation Facilities:

a) Rail: Rail freight service is provided by the N.Y., N.H., and H. in Barnstable. A spur line into the airport site could be built. Service could be classified as adequate but not excellent, despite the bankruptcy of the railroad.

b) Water: Harbor facilities are available in the Barnstable area but only for small craft, and the town has no ocean-oriented warehousing or terminal facilities.

c) Highway: Barnstable is served by a growing high-speed highway system. New highway construction within the next few years, principally the Southeast Expressway and Int. 195 connecting Routes 24 and 6, will provide limited access through to Boston and points west.

d) Air: The Barnstable municipal airport adjacent to the proposed industrial site has excellent facilities; both scheduled and local airlines operate from it. The runways are able to handle turbo-prop jet planes. This is one of the most important factors Barnstable has to offer in attracting industry. Extension of runways, installation of a 24-hour instrument landing system, new control tower and approach lights will make this one of the best New England airports. The enlarged airport will be able to handle Electras and the Canadian turbo-prop air freighter, important air freight considerations.

e) Terminal Facilities: With the exception of the airport terminal and hanger and small rail freight sheds, Barnstable is limited in terminal facilities. Truck facilities provide regular daily service to Boston and Fall River, but no regular service beyond these points.

f) Transportation Costs: Transportation costs are higher from Barnstable to the major markets of New England and New York than from many competitive Massachusetts locations. A study comparing rate scales for Barnstable, Boston, Plymouth and

Taunton revealed that Barnstable had higher shipping costs to New York, Boston, Hartford, New Haven, Providence, Portland, Maine, and Manchester, New Hampshire, than the other communities. Truck load cost from Barnstable to New York would be at least $5 to $8 more than from Plymouth, and about $16 to $17 more than from Taunton. Shipment to Boston from Barnstable by truck would be $14 to $18 more per truck load than from Boston to Plymouth.

Sites:

a) Land available for industrial development is adequate at the proposed airport site. Between the Mid-Cape Highway, Iyannough Road, Phinneys Lane, the airport and town boundary are some 1500 acres of essentially undeveloped lands. Subtracting public and semi-public holdings from this total, also ponds, and some commercial development, leaves roughly a thousand acres which might be developed for industry.

b) Soil and topographic features appear excellent for industrial construction except in the most northerly areas near the Mid-Cape Highway.

c) Facilities now available or that could be available:

   1) Rail, water, highway. Better major highway and access roads would have to be made available. Railroad facilities could be constructed.

   2) Local production facilities - some small machine shops on Cape Cod, but nothing of importance in Barnstable.

3) Industrial Zoning - the site is zoned for Industry, but zoning provisions are weak.

4) Utilities:

(a) Power is available.

(b) Water would be made available but quantity may be limited for a major water using industry.

(c) Gas could be made available.

(d) The site appears to be sewerable from the present Hyannis Sewer District, but further study is needed.

(e) Waste disposal conditions are unknown at the present time.

d) Cost of land and terms of purchase or lease unknown at present time.

e) Industrial floor space now or to be available - probably none, new construction.

Labor Force: Barnstable Township labor force is relatively small. Approximately 4,000 males 20 years of age or over reside in Barnstable. Nearly 16% of these, over 600, are retired.* Although a Barnstable industry could be expected to draw personnel from a considerable surrounding area, Cape Cod itself has a labor pool of only some 18,000 based on 1950 Census data. The seasonal employment pattern and long established migration of younger people from the Cape has resulted in a relatively restrictedresident labor pool, we suspect.

* Annual town listing.

Market: The market for goods now manufactured in Barnstable - candles - is primarily mid-atlantic and midwest. The local market for manufactured goods is extremely limited. It is much too small to attract industry. No industrially oriented and no consumer-market oriented industry could afford to locate in Barnstable.

Industrial Fuel: Oil could be made available as Barnstable is the oil distribution center of the Cape. Gas could also be used for industrial fuel.

Location of Production Material

a) Minerals - none in quantity except sand, formerly made into glass.

b) Non-mineral products - only ocean fish and shellfish in modest commercial quantities.

c) Forest products - none in quantity or quality, now.

d) Fibres, furs, hides, none in quantity.

e) Partly processed or semi-manufactured such as rough castings, sheet steel, chemicals, cements, lumber, etc. - none available in quantity.

f) Finished products and byproducts such as paper, tinplate, electrical supplies, etc. - none in quantity.

Laws and Regulations: Present Barnstable zoning ordinance provisions relating to industrial areas are weak if they are to be used to attract high grade industrial developers. The permitted uses; land, landscaping, building setback and coverage provisions presently offer little protection for any developer intending to make a large capital investment in Barnstable. They require revision if the community wishes to attract desirable developers.

Power:

a) Electric power could be made available in quantity.

Water: Water supply is available and close by. However, if a major water using industry should locate in Barnstable, additional sources and supply will certainly be needed. This is subject to further study.

Living Conditions: Barnstable ranks very high in this category, offering new schools, planned community college, recreation, shopping, religious and social life, health and professional services, new and old homes and a favorable tax structure. This is a major consideration in attracting specific types of industry.

Climate: The climate is favorable to the location of most industries; it is warmer than in most other sections of New England.

IV. In light of the foregoing pages which set forth Barnstable factors, such as labor pool, transportation, and tax factors in the context of industrial location criteria, three questions must be asked. 1) What industry types are naturals or adaptable to a Barnstable location? 2) Which of these industries does Barnstable want? and 3) How can the community go about getting them?

While it would certainly be to the community's advantage if it could obtain one of the prestige, light-manufacturing industries as typified by Sylvania, Raytheon, General Electric, Avco, Remington Rand, IBM, RCA, Philco, Sperry Rand, that will not be easily accomplished. From a negative standpoint, Barnstable has a small, unskilled labor force, no natural resources of current major value, higher cost transportation and distribution facilities and no local market of note. On the other hand, the community has some solid assets. It offers excellent living conditions; housing appears adequate; and conversion of some summer homes to year round could easily expand the housing supply. The community has outstanding recreational facilities. Schools and libraries are as good or better than in most of Mass. communities actively competing for new industry. The local tax structure appears extremely favorable. The Town has an excellent airport. While undeveloped as yet, Barnstable industrial sites are comparable to others in ease of development. Utilities would appear to represent no real problem. While away from the

Boston metropolitan area, Barnstable is constantly being brought closer to the major scientific and educational complex of the state by highway improvements.

Balancing these factors and considering that industry locates where it is most economical for it to do so, everything considered, we feel that the only industrial types adaptable to a Barnstable location would be those for which:

a) The ratio of raw material cost to the value added is low. This means that most of the work involved is skilled; watchmaking or instruments are examples.

b) The number of shipments originating or terminating is low. Here the higher transportation costs may not be seriously adverse, as in the production of a highly technical product where annual unit production is low, (say the manufacture of X-ray equipment.)

c) Labor supply in the immediate area is relatively unimportant. Here the industry would not have to depend upon the sparse local supply of skilled labor, but could recruit from the State or nation.

With these factors in mind, the only high grade industrial types adaptable to Barnstable would be research oriented firms or facilities of firms where transportation of product or raw materials is a small cost, where supply of local labor is not a large consideration and where the product is mainly one of brains rather than high capacity industrial machinery.

A research report by the Greater Boston Chamber of Commerce, entitled "The Boston Area, American top spot for Industrial Research" surveyed 150 leading industrial companies to determine what location factors were most important to a company when it decides to build a new research and development laboratory. Survey results revealed that the companies were most concerned with the following factors when making a location choice. In order of importance, they cited:

1) Availability of technical and professional employees.
2) Adequate and pleasant housing conditions.
3) Availability and accessibility of academic institutions.
4) Nearness to home offices of large manufacturing corp'ns.
5) Good transportation, road, rail, air.
6) Stable and fair taxes.
7) A research atmosphere.
8) Community conditions; honest government, good schools, highways, other public facilities and services.
9) Presence of industrial facilitating services in the area.
10) A suitable site for research buildings.

With the exception of factor #9, facilitating services (those supporting industries such as machine shops, physical testing, model construction, glass blowing and special equipment suppliers), Barnstable has all of the qualifications listed as essential. Soon, Barnstable should be just over an hour's drive from Boston and its academic and scientific resources.

Similarly, Barnstable will also be close to the large and skilled metropolitan labor pool. The new community college could also be a great asset in attracting a research industry to Barnstable. We foresee the airport as an important factor, as it brings a Barnstable site close to the home office of any locating industry. Also, for research, the airport overcomes the inferior Barnstable transportation position. Many of the products or supplies for research move by air.

However, the major Barnstable attribute, trite as it may sound, is "way of life." This, increasingly, is the major locational consideration of industry with highly skilled, professional workers. This is attested by the primary ranking of decent and attractive housing conditions in the Boston study. Not only does Barnstable have good housing conditions, but an outstanding list of other community assets, including unrivaled recreational facilities, wholly new school buildings, a diverse range of living conditions ranging from urban in Hyannis to the rural conditions found in Marstons Mills and West Barnstable. Additionally, the summer shopping facilities are as good as those anywhere in the Commonwealth, with the exception of Boston. Winter shopping facilities are fewer but adequate. All of these factors are prime elements in attracting and holding professional employees, an increasingly difficult task in many areas where employee raiding and professional ambivalence are commonplace.

V. Action Programming

Barnstable has definite industrial research and development possibilities, we believe, if the community wishes to act. However, it will require more than merely zoning an area for blanket industrial use. Specific industries must be sold on the idea of a Barnstable location. Additionally, the Town must be prepared to help in land assembly and some site and access improvements if necessary.

The approach to Industrial development varies in each community; sometimes private citizens power the effort; oftentimes an authority or an industrial building committee does it, sometimes the Chamber of Commerce or an Economic Development Committee. Precisely how Barnstable should pursue the goal of industrial development will depend to a great degree upon the community itself. But whatever the organizational format, the following conditions must be met to achieve the research-oriented industrial potentials seen in Barnstable.

A) A single agency or individual should be responsible for land assembly, improvements, sales and developer negotiation.

B) The Town should be prepared to make certain improvements in overall highway circulation to aid in the development of the industrial area.

C) The Community College should be brought strongly into the selection of long range industrial goals, particularly where the curriculum can help advance the industrial park.

D) Industrial development standards should be made considerably more stringent than the 1960 industrial zoning.

E) Concerted effort should be made to improve transportation, particularly truck warehouse and terminal facilities.

F) Water, sewer, gas and electric utility agencies and companies should be brought into the planning of the industrial area.

G) Brochures and other sales material should be directed specifically toward research oriented firms rather than attempting to hit all industrial classifications.

H) The Town's service organizations, financial institutions and major economic constituents should be brought into the program and play an active role in helping to sell Barnstable to potential research firms.

VI. Recommended Development Area

Research-oriented individual campus-type development is recommended for buildable sites within an approximately 1,000 acre area bounded northerly by the Mid-Cape Highway, easterly by the Barnstable-Yarmouth town line, southerly by the Hyannis Airport and westerly by Phinney's Lane.

This 1,000 acre area is traversed north-southerly by Old Barnstable Road, Flint Rock Road and Mary Dunn Road. Within the area are three distinct pond groupings having a total of 22 ponds. In the far eastern section are two major ponds--the larger of which is Lamson--plus eight very tiny "kettle hole" ponds. The southern group consists of one major pond, Mary Dunn by name, and a minor pond. The third group consists of ten ponds, five east of Mary Dunn Road--of which Israel is the largest--and five westerly, of which Little Israel and Flint Rock Ponds are the largest.

The ponds themselves would be important landscape assets for the kinds of development recommended. Also, the ponds may indicate a good ground-water supply, important for air-conditioning and process water.

The topography of the area is irregular; it is nearly flat in the southeasterly and southwesterly parts; it rises steadily from about 40 feet above mean sea level in these areas to some 100-150 feet elevation at the Mid-Cape Highway. Glacial sink holes and hummocks are in evidence throughout the area. The hummocks appear to be mainly sandy and gravelly, and some 20 to 30 feet clearance elevation.

Access

The nearest existing interchange on the Mid-Cape Highway is at Willow Street in Yarmouth, 7,100 feet east from the center of the area. Future possible interchange locations are Mary Dunn Road near the center of the area, Phinney's Lane some 6,900 feet west from the center of the recommended area, Old Barnstable Road (5,900 feet west) or Flint Rock Road, some 1,600 feet west. However, the Planners recommend that a wholly new interchange based on relocated Route 28 (see plan diagram) be constructed.

The area also can be reached either from Iyannough Road or Route 6A. Mary Dunn Road passes under the Mid-Cape Highway connecting Route 6A with Airport Road. Mary Dunn Road runs through the area and divides it nearly in half.

Access from Iyannough Road is via the Airport Road which connects with Mary Dunn Road and with the Old Barnstable Road, now ending at the southerly side of the Mid-Cape Highway. Flint Rock Road runs northwesterly between the ponds from the southern part of Mary Dunn Road and ends at the southerly side of the Mid-Cape Highway. Flint Rock Road is a dirt road, all

the other roads previously mentioned baing paved.

Fast of the area and slanting from the Willow Street interchange at the Mid-Cape Highway toward the Hyannis Airport are the New York, New Haven & Hartford railroad tracks. The airport is capable of handling and fueling turbo-jet aircraft, as well as the 880 jet.

Utilities

A substantial electric power transformer station is located in the south center of the development area. Fanning out from it, three power lines traverse the development area. Two of them are west of and roughly parallel to Mary Dunn Road, north-southerly. The third line runs west from the transformer station along part of the southern edge of the area and Old Barnstable Road just south of the development area, west of Mary Dunn Road.

A major water main of 12 inch diameter or larger runs southerly in Mary Dunn Road toward Hyannis from a standpipe north of the Mid-Cape Highway.

Ownership Patterns

The recommended area is comprised of some 108 parcels of land owned by 65 different people or agencies, according to a 1950 Barnstable Assessor's plat. Subject to title search and and updating, these ownerships appear to be as follows: five unknown; nine uncertain; thirty-eight owners of single parcels; thirteen owners of two or more parcels. The Barnstable Water

District and the Town of Barnstable, each of which owns large parcels in the area, are counted among the owners of two or more parcels.

Development Problems

Successful research-oriented development in the above described area will require:

a. determination of a desirable and feasible area development plan;

b. assembly of diverse ownerships into marketable tracts;

c. provision of improved Mid-Cape Highway, Route 28 and railway and airport access;

d. provision of safe, convenient access to recommended development sites within the area, with utilities;

e. provision in the development plan for needed airport expansion, water resource protection and cemetery preservation, and conservation.

f. protection of long-term property tax values by establishment of land-use, building type, building density and off-street parking and loading standards.

Development Procedure Alternatives and Recommendations

Accordingly, the Consulting Planners recommend consideration of a privately chartered development corporation under Mass. General Laws Ch. 121 A, as amended through Ch. 652 of 1960. This is the procedure chosen by the Prudential Insurance Company and others. A pleasant little industrial development in southwestern Lawrence, at the interchange of Interstate Routes 93 and 495 is being carried out under some of the provisions of Chapters 121 and 121A, Mass. General Laws. Three other Ch. 121A

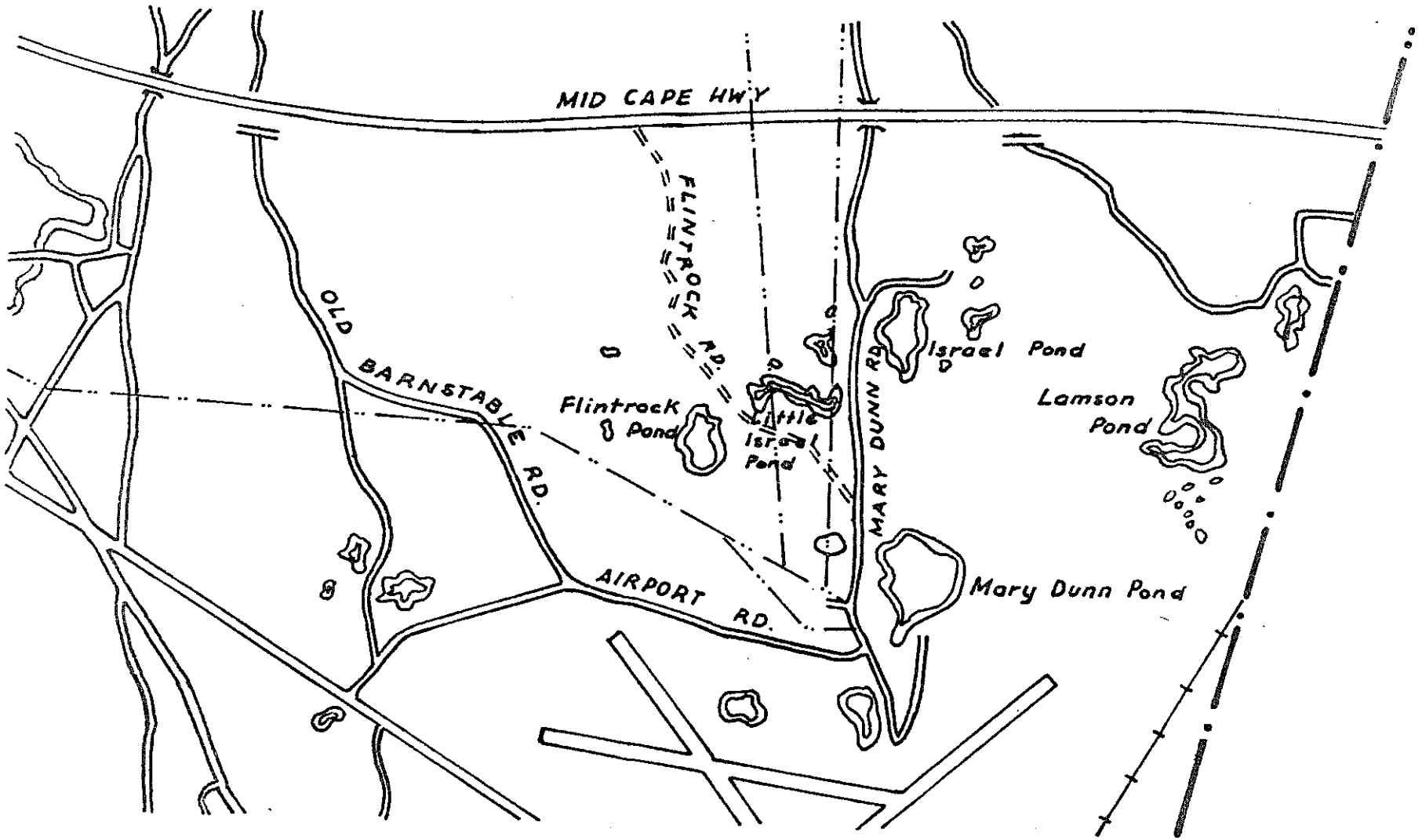
corporations are carrying out other styles of building in Boston.

The principal alternatives to a private Ch. 121A corporation appear to be either a wholly municipal, federally financed, Ch. 121 agency, or a wholly private corporation.

Procedure through Ch. 121A is recommended because of the self-evident doubts and delays about major town meeting votes to originally create and initially finance a Ch. 121 municipal agency, and thereafter at every stage where required, to endorse by vote the subsequent acts of the Authority.

A wholly private corporation obviously would be confronted with difficulty amounting to impossibility in attempting to assemble and confirm marketable title to the many ancient woodlots of unknown or uncertain present ownership.

Ch. 121A, under substantial community controls and safeguards, with public reviews in the Selectmen, Town Meeting, the Town Planning Board and the State Housing Board appears to the Consulting Planners to offer the best combination of the power of eminent domain with the long life, energy, imagination and drive of self-financing private enterprise.


MID CAPE HWY
FLINTROCK RD.
OLD BARNSTABLE RD.
MARY DUNN RD.
AIRPORT RD.
Flintrock Pond
Little Israel Pond
Israel Pond
Lamson Pond
Mary Dunn Pond

Chapter 4. Community Facilities

SECTION I FIRE PROTECTION

The following paragraphs are a planner's analysis of present fire protection services in Barnstable. As planners we can only comment on location of facilities in terms of land uses, running time and circulation. Barnstable appears to have good fire equipment housed in generally substantial buildings. We wish that there were more full time personnel. We see need for eventual construction of two new fire houses in the community. Also we think that Barnstable should have a single integrated fire department to handle this aspect of community protection on a town-wide basis. This need can only become more in evidence as the town continues to expand.

Districts and Stations

Five fire districts serve the Town of Barnstable - West Barnstable, Barnstable, Hyannis, Centerville-Osterville and Cotuit. The Hyannis District has a sub station at Hyannisport and the Centerville-Osterville District has a station in each of the villages. A county brush breaker is used, housed and maintained at the West Barnstable Station, while some town equipment is kept at Cotuit, Osterville and Centerville Stations.

Each district is staffed almost entirely by volunteers. There are only 9 full time firefighting personnel in all the districts outlined, including three full time chiefs.

FIRE DISTRICT DATA

District	Tax Rate	Acreage Covered	Building Date	Equipment	Number of Men	County & Town Equipment	Alarm System
West Barnstable	7.40	8,644	1945	1956 Bean (high pressure)	29 call	brush breaker, county	county
Barnstable	4.60	6,067	1936	1941 500 gal Mac 1956 Ford 500 gal (high pressure) 1 rescue ambulance 1 boat trailer	30 call		county
Hyannis	3.60	5,036	1925	1956 ambulance 1954 rescue truck Chief's car 1926 1000 gal pumper 1950 1750 gal 1952 500 gal 1949 300 gal 1932 city service ladder	44 call 1 chief 3 full		house
Hyannisport			1930's	1955 500 gal			
Centerville-Osterville	4.00	14,584				brush breaker, town	
Centerville			1925	1950 500 gal 1957 Bean 1955 ambulance 1951 service	32 call	1960 patrol truck, town 1942 brush breaker	family
Osterville			1925	1950 500 gal pump 1950 rescue truck 1960 service truck	3 full 38 call	Converted navy crash truck	house
Cotuit	6.60	3,506	1936	1937 500 gal 1940 500 gal 1953 400 gal tank on Ford 1958 ambulance	40 call 1 chief	225 gal, town 1947 Dodge power wagon	Osterville

BARNSTABLE, MASS.

ATWOOD & BLACKWELL, PLANNERS, BOSTON

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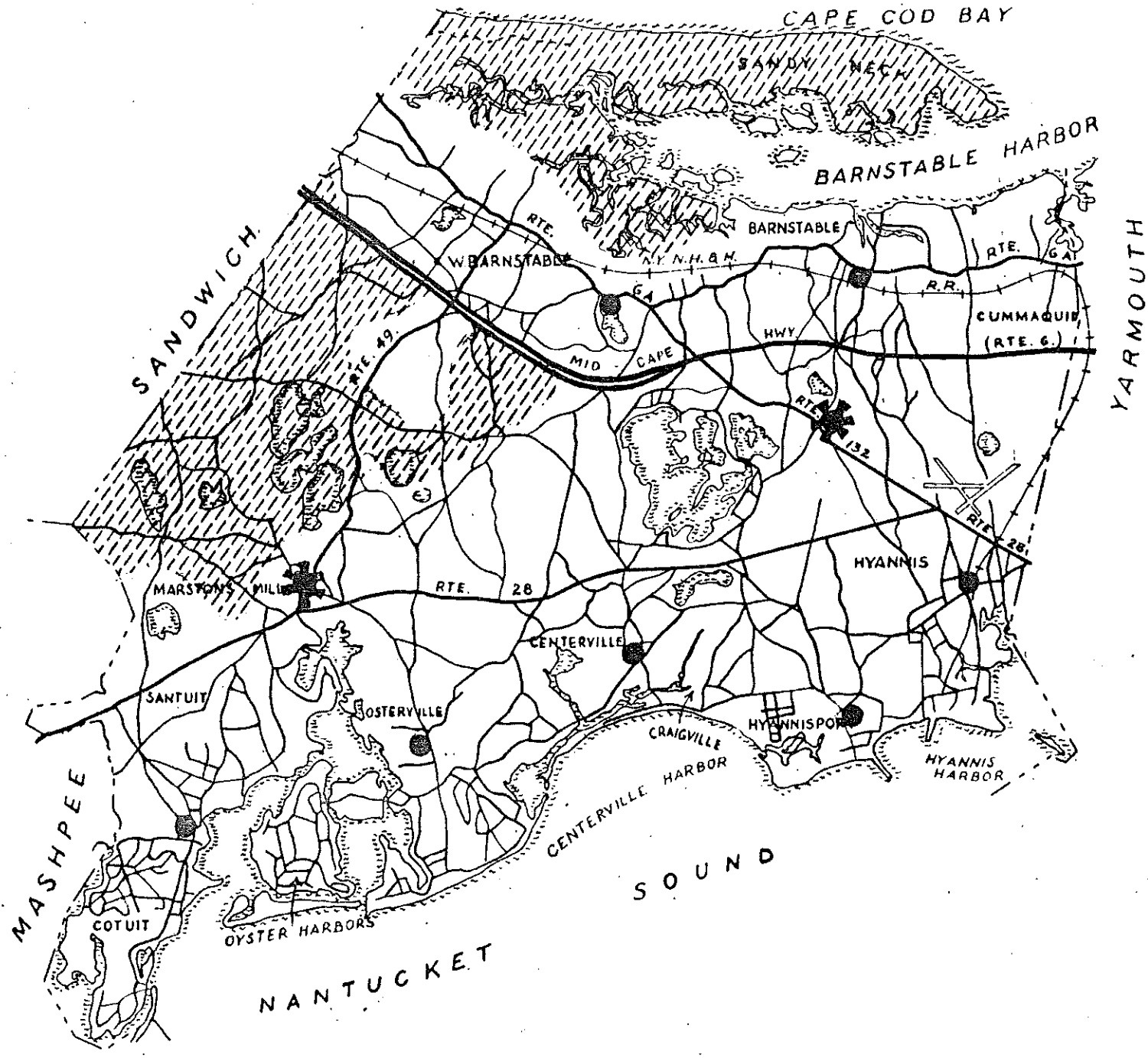


FIRE STATIONS

- EXISTING FIRE STATIONS
- PROPOSED FIRE STATIONS
- BEYOND THREE ROUTE MILES

Protection Patterns

With the exception of the Newtown area which includes Mystic Lake, Middle Pond and Sandy Neck (Map #1), nearly all of Barnstable is within three route miles of a fire house. Much of the town is within three route miles of more than one firehouse. Three route miles is commonly used to determine fire station location in areas which are not densely developed.

Location of Existing Fire Stations

The West Barnstable and Barnstable stations are both located on Route 6A, within three miles of one another. Both are well located relative to center of population, existing business and highways. Both should serve their villages for many years to come.

Hyannis Station is located on the corner of Elm Street, opposite North Street. This location is at the east end of the business district, not too far from the population center. However, circulation here, especially during the summer is a problem, potentially a dangerous problem. This station, even though in good condition, should probably be moved sometime in the future to a new location, better planned in relationship to proposed circulation changes. It should probably be placed on the new Hyannis feeder proposed by the planners.

The Hyannisport Station is well located to serve the needs of this village. The Centerville-Osterville District stations are located on Main Street, Centerville and Main Street, Osterville. Both are seemingly well located in relationship to circulation, population and business.

The Cotuit Station is centrally located, although not on a main road. Eventual relocation of this station may be warranted when the population of Cotuit increases, and growth patterns are determined.

Additional Fire Station Requirements

The planners see the need for possibly two additional stations - one located in Marston Mills at the northwest corner of Cotuit Road and the other somewhere between the rotary at the intersection of Iyannough Road and MidCape Highway and the airport. Plans for this station must reflect long range circulation and industrial research park planning. Location of Route 28 Hyannis bypass and developments north of the airport will have important bearing upon its precise location.

Marston Mills facility would provide fire protection within three route miles of the Newtown and Mystic Lakes area. The second proposed station would cover the area south of the Mid Cape highway and those parts of the West Barnstable and Centerville-Osterville districts now outside of a three route mile radius of a fire station and would offer additional protection for the developing Chequaquet Lake area. The station would also provide additional protection for the airport, the future research park and could help cover every other district except Cotuit.

New England Fire Insurance Rating

The New England Fire Insurance Rating Association has made recommendations for improving the fire districts of Hyannis and Centerville-Osterville. No recommendations for other districts have been completed.

Among the recommendations for Hyannis and Centerville-Osterville are:

1. Installation of fire alarm systems.
2. Coding of the alarm system.
3. Providing at least 20 alarm boxes in heavily built-up districts.
4. Providing a separate fireproof fire alarm room to receive fire alarms and calls. This could be in the existing fire stations, but should have outside access.
5. Establishing regular shifts of full-time fire-fighters covering a 24 hour period to meet the following minimum requirements, and eventually meeting the standard requirements for personnel on duty.

	Minimum	Standard
Hyannis		
Engine 3	1	5
Engine 5	1	7
Engine 6	1	7
Ladder 1	1	6
Centerville-Osterville		
Engine 1	1	7
Engine 2	1	5
Proposed Ladder	1	6

6. Major Equipment Needed:

Hyannis

-mechanical ladder to replace 1932 ladder.

Centerville-Osterville

- ladder, with 250 feet of ladder, preferably mechanical.

- triple combination 750 gallons per minute.

Both should be housed in Osterville.

Future Fire Department Administration

Eventually, Barnstable must consider an integrated town-wide fire department to replace today's several operating districts, we believe. While water is certainly involved in fire-control, the two are not inextricably bound together and the several water and fire districts within the town reflect earlier political and economic considerations which seem out of place in a community of Barnstable's present size and growth potential. While lauding the efforts and diligence of the town's several fire companies, the planners must recommend to the town that further efforts be made toward establishment of a single department.

The advantages such a department would offer the community appear to be the following:

A) Centralized Control and Responsibility. Direction and guidance from a single authority is the first tenet

of good administration. While the planners recognize that the individual departments are well coordinated in their fire fighting efforts, they feel that better coordination, better protection, and a more orderly approach to future growth can result from an integrated fire fighting framework for the whole town. Barnstable is no longer a collection of small sleepy villages, but the center of a rapidly expanding, dynamic region. Its fire protection requirements are no longer village sized; the community needs the flexibility and efficiency of a single fire department to encompass the problems sure to arise in the years ahead.

B) Economy. The planners feel that better fire protection could be offered the town at costs comparable to the multi-districts of today's town-wide department. Purchases could be made in quantities. There would be no duplication of services or personnel. When new facilities are needed, in any one district, the cost would be spread over the whole town, rather than all costs falling upon one district, as happens at present.

C) Protection. Integration would permit a better approach to staffing and administration. With size comes the ability to establish organization formats, training schedules, specialized personnel, and equipment services unknown in the small department. Employee morale and professionalism are enhanced in the larger organization. Size permits

hiring specially qualified personnel which no single district could afford. We believe that the integration of Barnstable fire districts into one town-wide fire department can only bring a better level of service to the community in the years ahead.

SECTION II WATER DISTRIBUTION

Introduction

Three water districts and a private water company furnish the town of Barnstable with water. The Barnstable Water Company, which serves Hyannis, Hyannisport and part of West Hyannisport, is privately operated. The Barnstable Water District furnishes water to the villages of Barnstable and Cummaquid. The Centerville-Osterville District serves both these villages, and Craigsville, Marston Mills, Oyster Harbors and parts of West Hyannisport. The Cotuit Water District serves Cotuit and Santuit. There are no connecting water mains between any of the municipal districts. However, there is a connection between the Centerville-Osterville District and the private Barnstable Water Company.

West Barnstable has no water district and houses and businesses are supplied by individual wells.

I Barnstable Water Company

The Barnstable Water Company, presently deriving its water from three sources, has an extensive system of mains serving urban developments within its district boundaries. With few exceptions, all streets in the district have water mains, but many are under six inches in size. Many of the smaller mains are either stubs serving one or two homes or seasonal residences, but also there are many serving

built-up year-round areas, particularly in the area bounded by Pitcher's Way, North Street, Barnstable Road and Route 28. Other areas where small sized mains are numerous are in West Hyannisport and part of Hyannisport.

Source of Supply and Storage

The three supply sources of the Barnstable Water Company are 1) Mary Dunn Pond, where rated capacity is 1 mgd; 2) North of Route 132, east of the Yarmouth Road, with 2 mgd capacity, and 3) Simmonds Pond with .75 mgd capacity. Another pumping station with a 1 mgd capacity is being constructed near Straightway between West Main Street and the South Country Road. A storage facility of 500,000 gallons is proposed between this pumping station and the one at Simmonds Pond. Presently, the only storage is located about one mile north of Mary Dunn Pond, outside the district boundaries. This facility has a capacity of 300,000 gallons. The company will soon be able to pump 4.75 mgd to meet the growing needs of the area.

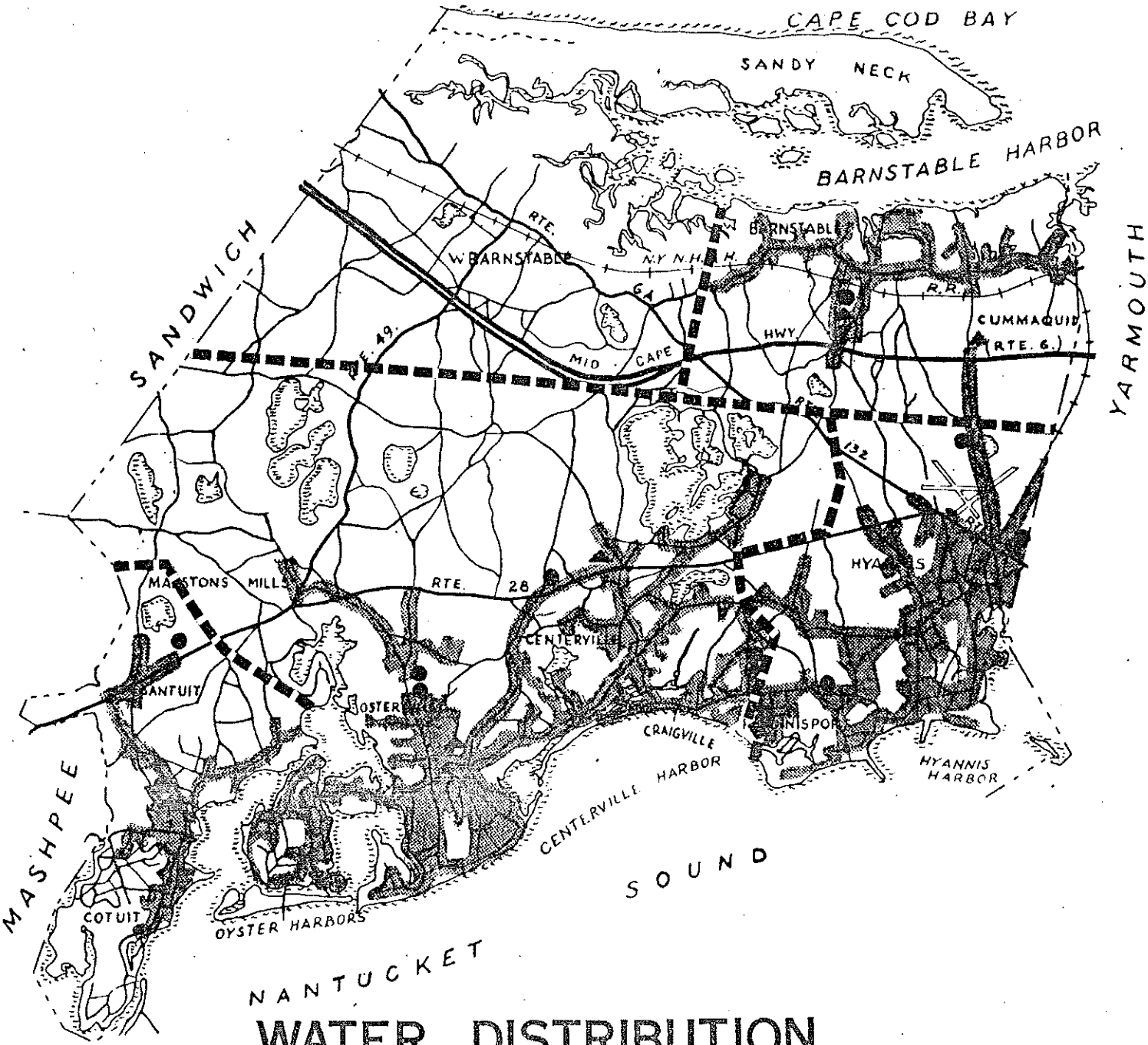
Water Usage

Average daily water requirements within the area serviced by the Barnstable Water Company have increased at the rate of about 100,000 gallons a year, as shown in the following table.

BARNSTABLE, MASS.

ATWOOD & BLACKWELL, PLANNERS, BOSTON

SCALE IN THOUSAND FEET 0 1 2 3 4 5 6 7 8 9 10



WATER DISTRIBUTION

AREA OF COVERAGE

DISTRICT BOUNDARIES

PUMPING STATIONS

WATER STORAGE FACILITIES

Water Usage

	1960	1958
Total Pumped	405,638,000	329,004,000.
Average Daily Pumpage	1,108,301	891,300
Peak Day	3,265,100	2,993,000

New service connections each year average about 100, and continuation of this trend is expected. Present plans indicate that as water requirements increase, additional storage facilities will be built rather than additional pumping stations.

II Barnstable Water District

The Barnstable Water District serves nearly all of the built-up areas within the villages of Cummaquid and Barnstable. With the exception of Cobbs Village and a few stubs, all mains are of six inches or greater in size and appear adequate for the near future. The smaller mains at Cobbs Village consist both of stubs and connectors.

The source of supply is located south of Route 6A on Old Bottom Road, and has a pumping capacity of just over 600,000 gallons a day. A storage tank with a 200,000 gallon capacity is located north of the pumping station.

Average daily water usage has increased by 22,000 gallons since 1956, with nearly 17,000 of this increase occuring since 1958. The 1960 average daily consumption was 116,000 gallons, with a total consumption for the year being 42,339,730, an increase of over six million gallons in two years.

Peak day in 1960 saw 327,000 gallons pumped, as compared with 293,430 gallons in 1958 and 274,460 gallons in 1956.

No new pumping facilities are planned, but tests have been made to find additional water sources to meet future requirements.

III Centerville-Osterville District

This district serves the largest land area in town, with an extensive system of mains. Most mains are six inches or larger. Smaller mains occur primarily as stubs, especially at Oyster Harbors, but also in Osterville and Centerville. These smaller mains serve few houses and appear adequate. One main line runs to Marston Mills along South County Road and serves the village center. Nearly all of the district south of Route 28 that is developed is serviced, with the exception of part of West Hyannisport. North of Route 28, only Marston Mills and the south side of Wequaquet Lake have piped water.

Sources of Supply and Storage Facilities

Three water sources have been developed by the Centerville-Osterville Water District. Two of the pumping stations, one in West Hyannisport and the other on Route 28 near the Osterville Road, have a capacity of 720,000 gallons a day each, while the main station in Osterville off Main Street has a capacity of 1,728,000 gallons a day. A total of 3,168,000 gallons a day can be pumped.

Two storage facilities, one off Tower Hill Road with a 400,000 gallon capacity and the other off the Centerville Road with a 225,000 gallon capacity, are used by the district.

Average daily consumption in 1959 was just under 690,000 gallons a day, while the peak day was 2,470,700. Total pumping for the year was 251,392,000 gallons.

There are no present plans for expanding the pumping or storage capacity in the district.

IV Cotuit Water District

The district serves nearly all of the built-up portions of Cotuit and Santuit and, except for a few stub lines, the mains are all six inches or greater.

Presently, the district obtains its water from two sources, one below Lovell's Pond with a pumping capacity of 720,000 gallons a day, and the other off Old Oyster Road with a 554,400 gallons a day pumping capacity. Two storage facilities, one off Old Oyster Road and the other off Main Street, of equal size, have a combined capacity of 400,000 gallons.

Capable of presently pumping 1,274,400 gallons a day, the district is continually seeking new sources of water to meet its increasing demands, which have grown from 112,000 gallons a day in 1956 to nearly 150,000 gallons a day in 1960. Total water pumped in 1960 was 54,494,300 gallons, compared to 40,932,000 gallons in 1956. Peak daily pumpage

in 1960 was 609,800 gallons, about 90,000 gallons less than in 1956. Yet in 1960, an increase in total water pumped and pumpage during peak week occurred.

V Recommendations

Short Range

Short term water supply problems in the Town of Barnstable appear to be minor, for the most part. It is highly recommended that inter-connection of the four systems be made for mutual protection. This could be done by extending a main from the storage tank in West Barnstable owned by the Barnstable Water Company to the line now being placed in Mary Dunn Road in Barnstable Village, a distance of about .6 of a mile. Cotuit could be connected by laying a main in Route 28 from the pumping station to the intersection of South County Road, a distance of just under two miles.

Present water sources appear adequate for present population and some growth in the near future, but long term needs will create a water problem unless the districts find additional sources now and get the land for future needs.

Extension of the systems occur when the needs arise, and there does not appear to be any large number of house groupings in any of the districts without water. Of all the districts, Barnstable--with only one pumping station and storage tank--appears most vulnerable. A break in the main between the storage facility and Main Street would cut off the water

supply from the whole village. The erection of another storage facility in the Cummaquid area should be considered, as should the possibility of a pumping station around Israel Pond with mains extended along Mary Dunn Road.

Long Range

Population growth prospects for Barnstable force the Planners to recommend that the town eventually reconstitute its three water districts into a single town-operated municipal water department. The private Barnstable Water Company should be purchased and its operation assumed by the newly created town water department. While the water districts and the private water company appear efficient and capably managed, town long range water supply and fire protection interests will best be served by a single operating department. The Planners feel that consolidation will provide better service at lower consumer cost.

Consolidation will eliminate much of the present duplication of personnel and equipment. It will permit economies from mass purchase of equipment and supplies. It will permit a more efficient use of personnel. It will also add another dimension to water service by making possible ownership of specialized equipment which none of the individual districts can now afford.

Salient features of long range recommendations for water

supply improvement include:

1. Consolidation of Centerville-Osterville, Cotuit, Barnstable Water District and the Barnstable Water Company into a single unified town water department.

2. Analysis of town-wide water resources and reserves. Acquisition of the best major water supply lands in the next few years for future water supply development.

3. Linking of the major South Shore Barnstable villages by a high capacity water main along the line of Route 28 to insure water supply and fire protection.

4. Development of major storage reservoir facilities on Shootflying Hill. This prominence can supply high pressure water to all of Barnstable and could supply West Barnstable Village with water--possibly at less expense than development of a well field and pumping station--with storage facilities for a separate West Barnstable Village Fire District.

SECTION III RECREATION

Introduction

Recreation programming and analysis is difficult to accomplish with precision. Different communities vary markedly in their recreation needs and desires. While national standards have been developed for recreational facilities, they are general in their application and related to population, rather than to unique demands for facilities and services resulting from climate, regional location, relative population densities, or seasonal differences in demands.

Using the approach above leads one into listing a diverse range of facilities based on national experiences which have no relationship to Cape Cod or Barnstable recreational facilities demands. In point of total land holdings, Barnstable has more than adequate land area in public land holdings for recreation. The American Recreation Association recommends that for each 100 people a community have one acre of recreational land, 1/3 developed for active recreation and 2/3 for passive recreation. By these standards, Barnstable should have some 46 acres for active recreation and another 96 acres held for passive recreation. With large developed

playing fields at most Barnstable schools, extensive beach developments and over 3,000 acres in land of a public or semi-public nature, Barnstable appears to have more than enough recreational land area for its year-round residents. However, the determinates of recreational planning for Barnstable are not related to land extent alone. Quality and extent of programs carried on today and in the future, location of activities within the town, summertime demands, administration organization and economic resources underlying the recreation program, are all importantly involved in recreational planning.

Recreation Today

The modern concept of recreation is remote from earlier traditional concepts of "exercise" and "physical development". Today, recreation is thought of as a necessary and stimulating force in life development. It encompasses a broad range of activities for young and old, ranging through such diverse and varying activities as handicrafts, singing and modern dance to sailing and hard physical sports such as baseball, softball or hockey. Increased leisure time, increased incomes and a growing elderly population have expanded the concept of recreation from its earlier orientation towards youth into a more total program,

BARNSTABLE, MASS.

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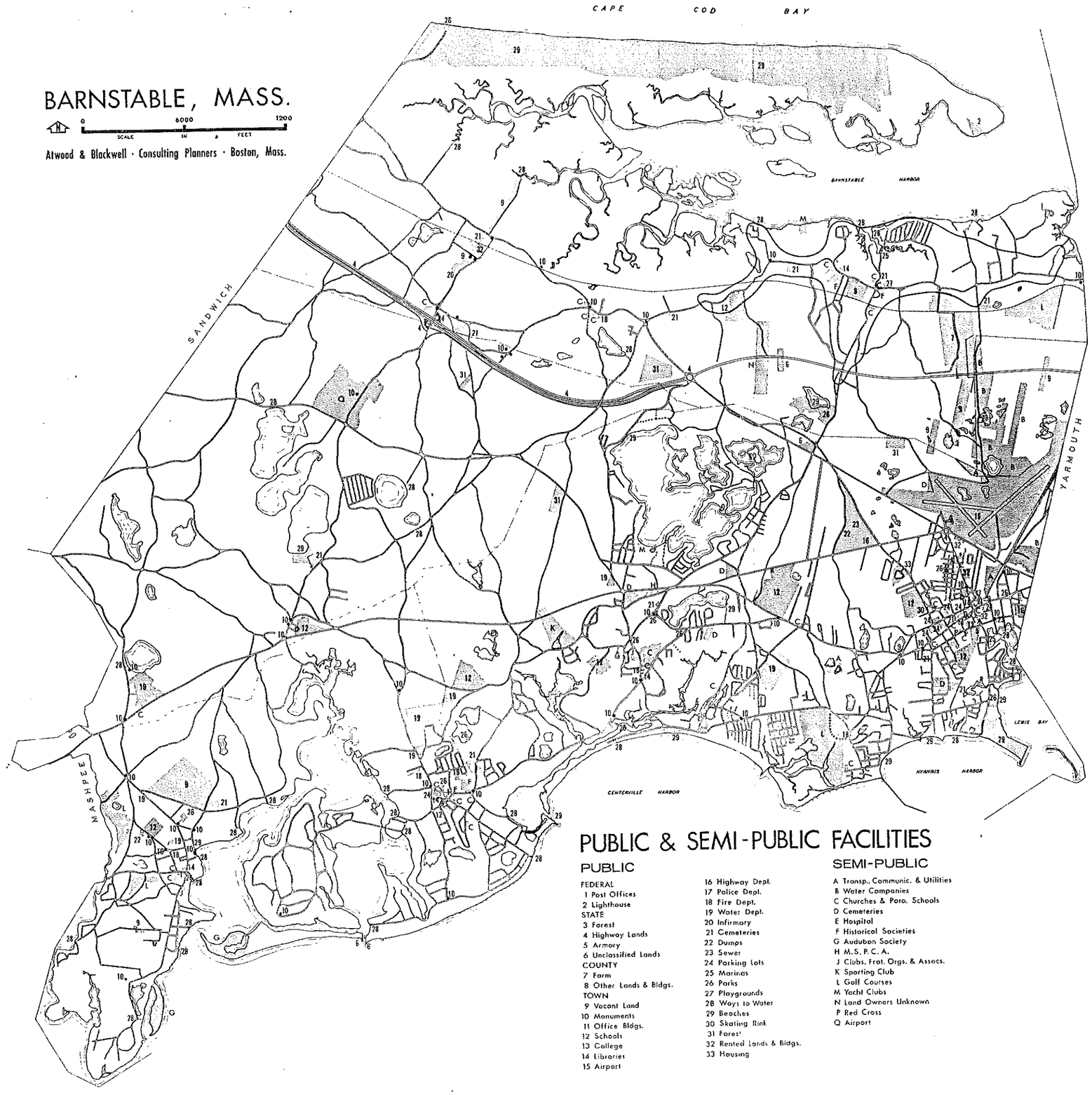


PUBLIC & SEMI-PUBLIC FACILITIES

PUBLIC

FEDERAL
1 Post Offices
2 Lighthouse
STATE
3 Forest
4 Highway Lands
5 Armory
6 Unclassified Lands
COUNTY
7 Farm
8 Other Lands & Bldgs.
TOWN
9 Vacant Land
10 Monuments
11 Office Bldgs.
12 Schools
13 College
14 Libraries
15 Airport
16 Highway Dept.
17 Police Dept.
18 Fire Dept.
19 Water Dept.
20 Infirmary
21 Cemeteries
22 Dumps
23 Sewer
24 Parking Lots
25 Marinas
26 Parks
27 Playgrounds
28 Ways to Water
29 Beaches
30 Skating Rink
31 Forest
32 Rented Lands & Bldgs.
33 Housing

SEMI-PUBLIC

A Transp., Communic. & Utilities
B Water Companies
C Churches & Paro. Schools
D Cemeteries
E Hospital
F Historical Societies
G Audubon Society
H M.S.P.C.A.
J Clubs, Frat. Orgs. & Assocs.
K Sporting Club
L Golf Courses
M Yacht Clubs
N Land Owners Unknown
P Red Cross
Q Airport

reaching out to all age segments of the population. The growing national trend toward construction of recreation buildings and centers underscores the widening concept of recreation to include once indoor, passive pursuits in addition to active out-of-door activities. What does this mean for Barnstable recreation planning? Important factors seen by the planners in recreation planning are these:

1. Increasingly, Barnstable appears to be the retirement home for hitherto non-residents. While 1960 U.S. Census figures are not yet available, examination of voter lists, house construction figures and the planners meetings with citizen groups in the Barnstable Villages reveal the growing role being played in civic affairs by retired senior citizens. At the present time no appropriate public facilities or programs appear available for this group. Certainly, some recreation and fellowship is carried on in such agencies as the fraternal orders, church groups, civic clubs--such as Rotary, Kiwanis, and Lions--and specific clubs such as the Barnstable Retired Mens Club. However, there are no continuing recreational programs specifically tailored to the needs of the retired group, or facilities where appropriate programs could be carried out. Meeting the recreation needs of an expanding elderly population appears an important recreational planning aspect for Barnstable.

2. The great physical expanse of Barnstable (some 65 square miles), and the physical remoteness of Cape Cod from available private recreational facilities, especially in the winter, present special facilities demands. The town is divided into several small villages, none of which can support more than elementary recreational facilities on a year-round basis, if left to themselves. Yet the town itself, all villages together, is one of the wealthiest communities in the State in terms of per-capita tax valuation. Considering the towns' remoteness and economic means, how much more should it be accomplishing in recreation, particularly for its teenage groups.

3. The tremendous summertime population expansion in Barnstable (estimated at some 50,000 people) presents an especially difficult recreational facility planning program. The town has the dual problem of supplying summertime recreational facilities for its year-round population as well as for the whole spectrum of tourist and visitor traffic--the weekender, the week-or-two-vacationer, and the all-summer resident. The problem is tremendously complicated by questions of economic goals and tax consequences. To a large and measureable degree, the town is supported by tourists and summer trade.

Which recreational facilities should the town supply to keep the summer trade growing and vital? Should recreational facilities for summer people be self-sustaining? Should recreational facilities be planned on the basis of attracting one form of summertime visitor and not another? Should the Town offer recreational programs for its own town people, but not for summer people?

4. Barnstable's oceanside location requires that special emphasis be placed on recreational facilities revolving about beach and ocean, pond and lake activities. Because these are fixed and limited natural resources, a recreational program cannot be expanded by merely doubling the budget for the program. Land for Barnstable future municipal recreational needs must be acquired today if there are to be programs two decades from now. If not, acquisition of already built-up waterside properties for recreational purposes is likely to be too costly for the community.

5. Barnstable's rapid population growth of recent years, increasing summertime population, and growing year-round recreation demands, cause the planners to wonder whether some changes are not necessary in the planning and administration of the town recreation program. While Barnstable is a town, it has a very real, sophisticated, big-city-sized recreational problem, requiring competent, professional thought on a permanent

basis. While functioning well today, the present approach which divides facilities, planning, programming and administration among several agencies may not be adequate in future years.

Recreation in Barnstable, 1961

Three different agencies affect and control public recreation in Barnstable--the Board of Selectmen, the Park Commission, and the Playground and Recreation Committee.

Beaches

The Selectmen administer, maintain and police six of the town beaches--Kalmus, Craigville, Sea Street, Dowse's, Hooper's and Loop Beaches. Swimming programs for beginners, intermediate and advanced swimmers are offered at all beaches, except for Craigville and Sea Street. SCUBA instruction is planned for Kalmus and Craigville in 1961. A total of twenty life-guards protect these beaches, with seven guards at both Kalmus and Craigville, two each at Sea Street and Dowse's, and one each at the other beaches. The Selectmen also administer and control Hamblin's Pond in Marston Mills.

The remaining town beaches--Veterans Memorial, Hathaway's Pond, Joshua's Pond, Sandy Neck, Lovell's Pond and Lewis Bay Beach--are maintained and policed where necessary, by the Park Commission. Swimming programs

are offered at all beaches except Lewis Bay, by the Recreation Commission. However, Lovell's, Veterans and Sandy Neck are managed by the Park Department, while Hathaway's Pond, Joshua's Pond and Lewis Bay are managed by the Recreation Commission. The Recreation Commission offers morning classes for beginning, intermediate and advanced swimmers as well as life saving instruction at all beaches except Lewis Bay. The number of life-guards at each beach is as follows: Veterans Memorial, four; Hathaway's Pond and Sandy Neck, two; with one guard each at the other three beaches. The lifeguards instruct the swimming and life-saving classes.

Playground and Recreation Commission

This commission has many different activities scheduled throughout the town, in addition to its beach program. A full-time professional director, with a background in education, serves the commission as the administrative head. As many as thirty-seven other people may be employed in a given week on a part-time basis, under his direction. These include referees, scorers, timers, supervisors and janitors.

Physical Facilities: Three facilities can be used almost full-time by the Commission--the Osterville Community Center, the Centerville Community Building and the Kennedy Memorial Skating Rink. In addition, all

elementary schools are used to some degree except during vacations. The Junior High is used on Saturdays.

Athletic Programs: Athletic programs are primarily for school children, with two exceptions--a winter volley ball league conducted for men at the American Legion, and a softball league for men.

A number of after school baseball leagues are conducted or aided by the Commission, including Farm League, Little League, Babe Ruth League, Teenagers, and the Barnstable Red Sox, and Cotuit Kettleers of the Cape Cod League.

During the winter, girl and boy basketball leagues are conducted at elementary schools. Each school is used one day a week with supervision. In addition, Saturday finds the Junior High Gym in full use, with morning Little League Basketball, afternoon Girls High Basketball, and evening Boys High Basketball.

The skating rink is used by the High School Varsity, the Pee Wee Hockey League, and Cape Cod Amateur Hockey League, in addition to general skating.

Other Activities: Other activities offered by the Recreation Commission are: modern ballroom dancing at the Hyannis Elementary School Gym; square dancing at the Junior High School; art and painting classes; a Slim Gym Class.

In addition to the programs carried out by the Commission, the Osterville and the Centerville Community buildings provide meeting places for a number of clubs, groups and classes, such as Cape Cod Stamp Club, Chess Club, Osterville Garden Club, Cape Cod Choral Society, Cape Cod Hospital Association, Cape Cod Power Squadron, Boy and Girl Scouts, rug weaving and chair caning classes. While well maintained, both buildings are old and cannot be expected to fulfill the recreational space demands of a growing Barnstable.

Conclusions and Recommendations

Barnstable has an extensive summer and winter recreational program underway, as revealed in the previous pages. The Town has done a commendable job in assembling and maintaining beach facilities. The foresight shown in the acquisition of Sandy Neck is probably unique in the Commonwealth. This great recreational preserve will be of inestimable value in years to come. Summertime water facilities are extensive, although more effort is needed in marina development and lake and pond activities. Wintertime activities appear adequate for the Town, especially in sports, but more effort appears needed in passive recreational pursuits, particularly for the elderly. The town recreational program is hindered by lack of indoor recreational facilities, the main emphasis today being on part time use of school facilities , and

two elderly community centers. In addition to land areas already mentioned in conservation planning, which certainly have recreational impact, other major recreational planning recommendations follow below.

1. The Town of Barnstable should consider construction of a recreation center, possibly in conjunction with a new town hall in a civic center complex as recommended in our earlier Town Hall Report. The many-village nature of the community, lack of private recreational facilities--particularly in the wintertime--more retired people and lack of facilities for teenagers, underline this recommendation. The new Charles Hayden Memorial Recreation Center in Lexington is a suggested model. The Center should have a variety of meeting rooms, handicraft facilities, a gym, athletic work-out rooms, an area for teenage activities, space for theater and dramatics and possibly an indoor swimming pool. While some public funds would undoubtedly be involved in construction and maintenance, it might well be possible to acquire a facility through public subscription, and operate the facility through small sustaining charges.

2. Marina facilities are badly needed in Barnstable. Three sites seem most appropriate for long range development:

A. The Maraspin Creek area in Barnstable Village;

B. A site immediately behind Kalmus Park to be related to public and private recreational

facilities already there, and to proposed circulation improvements;

C. Poponesset Bay.

All the proposed marinas would be created by dredging. In each case, there appears to be enough vacant land for private construction of high tax-producing resort development, if the Town so desired, without disrupting existing uses. In each case, circulation improvements can be made commensurate with generated traffic. The marinas should be operated in so far as possible by fees and leased concessions.

3. Expanding present Barnstable beach facilities for general public or town use may be difficult. On the north shore, only Sandy Neck can be extensively further developed. Here we are concerned about possible over-exploitation of this great, five-mile long wilderness area. As the Neck is developed, we would hope that parking lots would be kept small, sited into the topography in such a way that natural beauty is preserved. In no case would we recommend that all of Sandy Neck be developed, so that there always will be large portions left in a natural state.

South shore beach expansion is difficult by reason of private development in most areas. The only remaining beach areas suitable for major development without nearby housing appear to be east of Rushy Marsh Pond, the Oyster

Harbor's Beach at Dead Neck; Long Beach, the western extension of Craigville Beach and possibly Sea Street Beach extension to the east. In all of these locations, there may be underlying political and social factors working against public acquisition and use. However, we believe that these areas should be acquired for long range public purposes, or, at least, protected against development by purchase, deed or gift as conservation areas.

4. Except for beach and water activities, there are few recreational facilities for the summer population. A major gap is the lack of tennis courts for summer people and townspeople. Tennis facilities could be operated on a self sustaining fee basis, we believe. Another potential self sustaining facility and a major drawing element for the Town economy would be construction of a major eighteen-hole golf course, somewhere in the western part of Town north of Marston Mills. A public golf facility would be operated on a sustaining-fee basis, and could bring in substantial revenues from lease arrangements for private resort facilities, particularly if developed near the ponds.

5. It appears to the planners that recreational development and operating efficiency could be improved in the years ahead, if all aspects of recreation were unified under a single Beach, Playground, Park and Recreation Commission, with a full-time director and a full-time staff. This would stop duplication of purposes,

duplication of personal practices and should permit economies in maintenance, administration and policing. The commission would function as a policy-forming body, much like the School Committee. Maintenance would be carried out by an integrated public works department, responsible for all aspects of public engineering, construction and maintenance.

Barnstable appears to the planners to have reached a point in growth and evolution that traditional town administrative arrangements are beginning to strain. While we are not management or administration efficiency experts, one of the Firm's principals has had extensive governmental management training. From time to time, we hope to offer comments on town administrative practices, not from the critical standpoint of an outsider, but rather administrative advice given as another alternative to be examined and assessed by townspeople.

SECTION IV HARBORS AND MARINAS

Introduction

This section of the Study Report analyzes Harbor and Marina facilities in terms of existing and potential recreational value. The report touches upon various Barnstable Township harbor locations and makes long range recommendations. A detailed analysis of factors underlying marina development recommendations for Barnstable Village is also included.

The first factor in harbor and marina development is to have appropriate water characteristics for such development. But equally important, intensive harbor development is contingent upon shorefront factors as well. Large marina facilities require local repair, equipment sales and storage facilities. Increasingly the trend is toward shorefront provision for boatel and restaurant facilities within such developments. These facilities represent a high intensity, commercial use of land. They can generate considerable automobile traffic and can have considerable impact upon nearby land uses.

In Barnstable Township new harbor and marina development proposals must reflect existing shorefront land uses as well as traffic carrying capacity of present and future highways. Even though Barnstable Township has many potentially developable areas for harbor and marina use, from a water characteristics standpoint, land use and traffic factors rule out intensive development at many locations. Only on certain portions of Lewis Bay, Barnstable Harbor and Poponesset Bay does there appear to be shorefront land use and waterfront freedom for

really large scale marina facilities development. At Cotuit Bay and Centerville Harbor the character of shorefront land use appears to rule out development. While channel and basin improvements are proposed for West Bay in Osterville, it appears difficult to undertake any large scale intensification of marina uses, again because of land use and circulation difficulties resulting from the present built-up nature. Comment on present harbor facilities and townwide recommended future actions follows below.

Barnstable Harbor

Barnstable Harbor has 89 slips, of which 49 are town owned. The slips appear capable of handling boats forty feet long, drawing up to seven feet. Characteristics and expansion of the facilities are more fully discussed in the Marispin Creek marina proposal at the end of this report section.

North Bay/West Bay

North Bay, also called Great Bay, has two private facilities with combined slip capacity of 135, and 35 moorings. The slips and piers are capable of handling boats up to 100 feet in length with draft of 7 feet at mean low water.

In April of 1959, a report from the U. S. Army Corps of Engineers, requested by the January 28, 1947 Committee on Public Works of the U. S. House of Representatives, was released. This study proposed a channel 10 feet deep to West Bay; 8 foot deep channel to Great Bay, and an 8 foot channel in the Seapuit River.

If this proposal is undertaken at total cost of $640,000 ($40,000 town contribution), the planners believe that zoning changes will be necessary to allow increased commercial marina development (possible development of town-owned marina facilities) on North Bay and possibly West Bay to handle increased boating traffic. There is some undeveloped land along the shoreline of both Bays, mainly near the Oyster Harbors Bridge locus, that could be used for this type of development without extensively changing the general character of the area. However, expansion is definitely limited by nearby residential development. Without changing these uses, the town cannot expect to develop major harbor and marina facilities at this location.

Hyannis

For purposes of this report, Hyannis Harbor is considered as Inner and Outer Lewis Bay and Hyannis Harbor. Hyannis Harbor has a private yacht club at Hyannisport, while Inner Lewis Bay has both public and private facilities. The Ocean Street pier with 24 slips, town-owned, caters both to private and commercial craft, the latter mainly sight-seeing and fishing boats for daily hire. Boats of 50 feet or more in length and under 7 foot draft can be accommodated at the town pier.

In addition to the town pier in the inner harbor, there are two private boat yards, one with approximately 13 slips and a larger facility capable of handling 80 boats. Small boats up to about 40 feet can be accommodated at the small marina while the larger marina appears capable of accommodating boats of 60 feet or greater. Commercial boats plying between Hyannis and the islands have private piers in the inner harbor.

Some expansion appears possible in the inner bay, but expansion is limited by the built-up nature of the shoreline and Yarmouth Town boundary. A more realistic solution to marina expansion in Hyannis would be development of a large marina just north of Kalmus Park. Such facility would be planned to accommodate the large boats now using the inner harbor as well as small pleasure craft. The inner harbor would be used exclusively for small craft. If flotation type piers were used in the inner harbor and removed after the summer season, large boats could use the inner harbor during the winter.

The capacity at Kalmus could be upwards of 500 pleasure boats. The planners would recommend a complete marina, including restaurants, snack bars and other associated facilities, possibly boatels; the town leasing some town-owned land for specific development with specific controls.

Poponesset Bay

Marina development in Poponesset Bay appears possible by dredging a channel from deep water to the bay, about a mile, and dredging a basin. Because little development has as yet occurred along Poponesset Bay, the Town is in good position to acquire vacant land now for eventual marina construction if engineering study proves the feasibility of Poponesset Bay development.

Conclusions and Recommendations

The planners recognize four possible Barnstable Township areas for eventual marina development: Kalmus Park, Poponesset Bay, Barnstable Harbor and to a lesser degree, North Bay/West Bay in Osterville. In the first three cases adequate highway facilities and non disruptive supporting uses can be developed. Ultimately, say in twenty-five years, all four areas may be developed or enlarged. For the present, the planners recommend that development be confined to Maraspin Creek or other Barnstable Harbor location and the Kalmus Park area. With state aid, these two facilities could be constructed in stages, and could be self-sustaining, we believe. Both facilities are well related to needed circulation improvements and both can accommodate ancillary shorefront uses.

MARASPIN CREEK MARINA PROPOSAL

I Introduction

The planners have been asked to comment upon the possibility of marina development at Maraspin Creek. This query followed an overwhelming negative vote by citizens of the village concerning a Commonwealth proposal for a marina west of Freezer Road in the marshes north of Barnstable Village Center. Most of the criticism directed

at the State's original proposal appears to have resulted from strong citizen feeling concerning village appearances, and impact upon the small business center wrought by development of the marina.

After study of the State's original proposal, and preliminary investigation of marina development possibilities at Maraspin Creek, we conclude that a marina in the Maraspin Creek locus is feasible and could overcome many village objections to the original plan if the marina were developed concurrent with traffic circulation improvements. Additional benefits accruing from a Maraspin Creek location would be control of back-flooding in the Cobbs Village area, probable property valuation increases in Cobbs Village, and possible tax additions accruing from resort and "boatel" construction resulting from the marina if the town elected to permit this form of development. We believe that a marina designed along lines suggested here, and on the accompanying map, would cause no physical harm to Barnstable Village, and would in fact improve circulation and traffic in the village center. The recommendations contained herein are subject to engineering review and abridgement.

II Commonwealth of Massachusetts Proposal

The original Commonwealth of Massachusetts proposal for marina development called for town aquisition of 25.8 acres--14.0 acres for actual basin and channel area, immediately north of Barnstable Village business and commercial area. The basin itself would be approximately 700 feet long. Connecting the basin to the open waters of Barnstable Harbor was a proposed channel some 80 feet in width, 1700 feet long, dredged to a depth of 8 feet below Mean Low Water. The basin area was proposed to be dredged to a depth of 6 feet. Facilities proposed included berthing for 145 boats, service area for boats and a launching ramp. Access to the marina was proposed from Freezer Road and from Route 6A in the village center.

Undoubtedly, the marina location as originally proposed by the State would have serious impact upon the appearances of historic Barnstable Village. Unwanted business development resulting from marina construction possibly could have been controlled by zoning, by limiting business development to Freezer Point and by tightening the areas permitted for business within the

village center itself. The most serious impact of the marina as originally proposed would be on traffic movement. Route 6A can only be widened at the expense of serious aesthetic and landscape damage. The situation at the intersection of Phinney's Lane and Route 6A is dangerous, even with traffic lights. The problem is complicated by shortsight distances and a sloping intersection. Further complicating the access problem to the marina as originally proposed, is the necessary movement around the church on tightly curving Millway Road. This means of access and the proposed entrance road directly at the village center, already crowded with traffic in the summer, would present intolerable traffic problems in the village center, especially considering that many vehicles would be towing boat trailers.

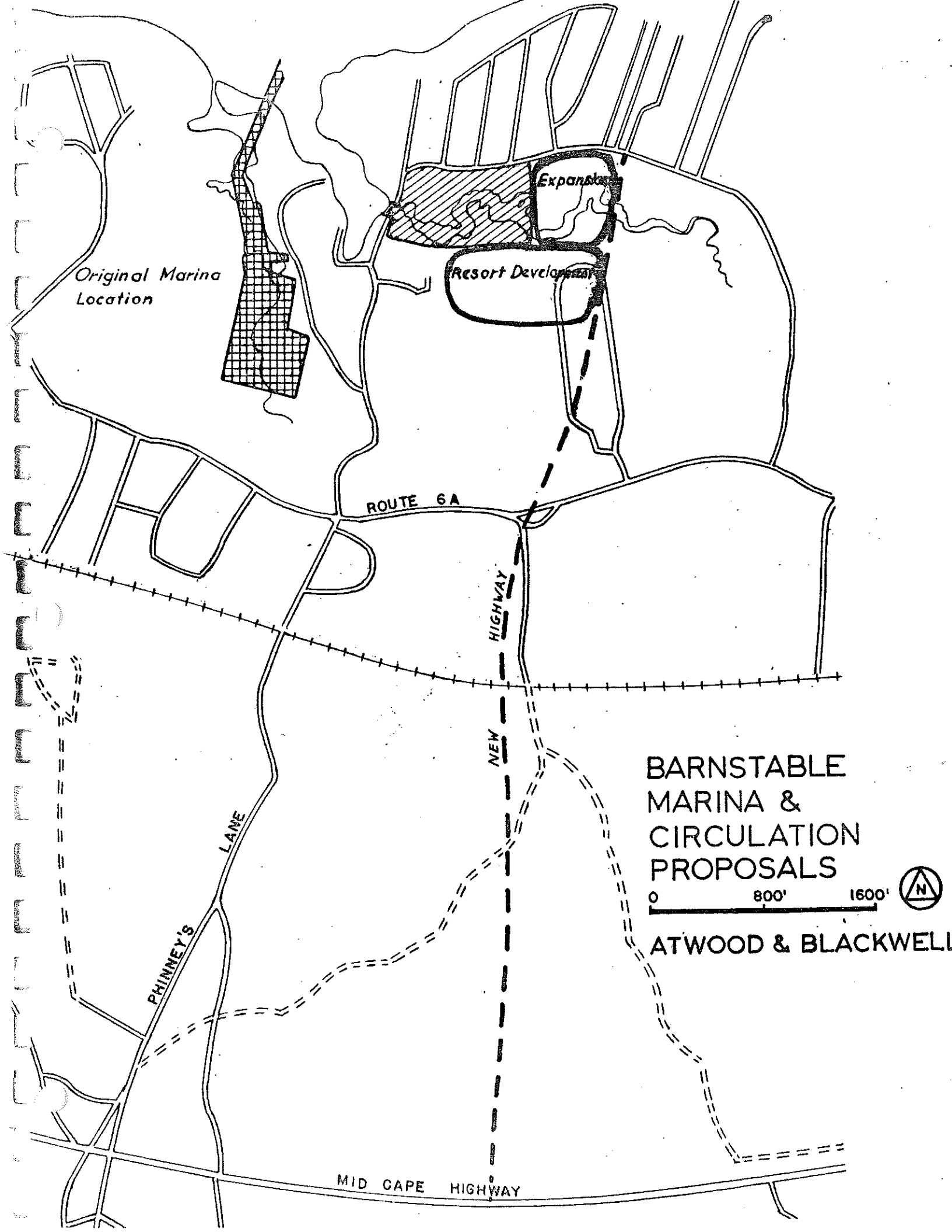
III Planning Considerations

1. Boating Trends. During the past several years, recreational boating has been one of the fastest growing American sports, providing a healthy boost to the economy and introducing thousands of people to the joys of life afloat. The entrance of banks, and other financial lending institutions into boat financing has made possible wide-spread ownership. A serious deterrent to even faster expansion is the lack of harbor and dock facilities. The "New York Times Boating Supplement" of Sunday, May 7, 1961, comments on the national growth of

boating and lack of adequate harbor facilities. The same issue extoled the merits of Massachusetts Bay as one of the great pleasure cruising grounds of North America. The northern Cape Cod shore is the southern boundary of this immense cruising ground, which stretches north to Cape Ann and Newburyport. Already Barnstable has had to turn away yachtsmen for lack of space at the present small harbor facility. According to "Marina", a boating magazine, the North Atlantic States have fewer marinas than the Middle and Southern Atlantic states. Yet our cruising grounds are among the best.

The Cape north shore offers few possibilities for marina development of consequence. Only Wellfleet Harbor and Provincetown have relatively sound and accessible anchorages, and the approach to Wellfleet has shoals. Barnstable Harbor, also with shoals, presents the only possibility for major marina development on the Mid-Cape north shore. Westerly toward Cape Cod Canal, two small harbors at Sandwich and Scorton appear to have no major marina possibilities. Easterly, between Barnstable and Wellfleet, are only limited facilities at Yarmouthport, Sesuit and Rock Harbor. None of the facilities seem expandable to the scale possible at Barnstable.

For the reasons above, it appears that if a major marina is to be constructed on the north side of Cape Cod between Cape Cod Canal and Wellfleet, it will have to be located somewhere within Barnstable Harbor. The fact that


Expansion
Resort Development
Original Marina Location
ROUTE 6A
HIGHWAY
NEW
PHINNEY'S LANE
MID CAPE HIGHWAY
BARNSTABLE MARINA & CIRCULATION PROPOSALS
0
800'
1600'
N
ATWOOD & BLACKWELL

it is to be constructed with State Aid, its convenient location as first harbor outside the easterly end of Cape Cod Canal and the difficulty of constructing facilities elsewhere, should guarantee successful and prosperous operation.

2. Barnstable Village Qualities. Preservation, where possible of unique village life qualities has been an announced planning board goal in their preparation of a Master Plan. Barnstable Village is one of the most picturesque of the Cape Cod villages. With many old houses, stately elms, the old Court House, first library in the country, and old Custom House, the village has much to be proud of and much to protect. The original marina proposal would certainly have introduced a new visual quality to the village, as well as a difficult traffic problem. However, marina development at Maraspin Creek would be totally screened from the village by the mass of Cobbs Hill. If traffic improvements outlined below were constructed at the same time as the marina, the planners believe that Barnstable Village qualities would be preserved, rather than undermined.

3. Traffic Planning. The planners have stressed the potential aesthetic loss to the town if Route 6A were widened and straightened. To preserve its present scale, more use of Mid-Cape Highway will have to be made in

future years. Eventually, this means more short connecting links between that highway and Route 6A and the north shore villages. The planners propose a new highway link starting at a new interchange on the Mid-Cape highway easterly of Phinney's Lane, to travel northerly over vacant land, crossing Route 6A near the old fair grounds to continue northerly to the Maraspin Creek Marina site and Cobb's Village. This link is proposed to ease traffic movement through the village center, to remove marina traffic from the village, and to provide another link with the north shore.

IV. Design Considerations

1. Size and Accommodations. The original Commonwealth proposal called for construction of 140 boat slips. Considering Barnstable Harbor strategic location, we believe that long range considerations call for a larger marina. A study of marina, yacht clubs and boat yard operations in 1961 by Smith, Stanley & Co. for the National Association of Engine & Boat manufacturers revealed that the 190 reporting marinas accommodated an average of 90 boats each.

This includes all marinas from small to large. The Town of Hempstead, New York constructed a marina for 170 boats. Ali Wai in Hawaii accommodates 286 boats, new Lake Mead marina will accommodate 560 boats when finished. Several of the Florida marinas accommodate well over 200 boats. While these figures are not entirely germane to

Barnstable, they are offered to illustrate the size and complexity of marina facilities elsewhere. A Barnstable marina should probably be planned to accommodate at least 200 boats even if this is not to be all constructed at once. With this in mind we have sized and located various facilities on our plan diagram to accommodate at least this number of boats and concommitant land facilities.

2. Small Boat Landing Facilities. The automobile towing a boat trailer is increasingly a factor in marina design. We have been unable to develop precise statistics on boat trailer ownership because the Registry of Motor Vehicles does not record trailer registrations by separate categories. However, a small boat land facility at Barnstable Harbor will be important and popular considering the geographic locus of the proposed marina relative to mid-Cape highway and off-shore cruising areas. Because of the magnitude of boating traffic likely to be generated from trailer operations and length of channel into the proposed marina, we believe that land facilities should be located elsewherethan within the marina itself. The plan proposes development of a launching ramp and parking facilities at Blishes Point.

3. Administrative Facilities A 200 boat marina will require a building or groups of buildings which can house communications, weather information, comfort stations,

possibly minimum first aid facilities, harbor master offices and general administrative offices for the marina. This should be centrally located and easily accessible.

4. Eating and Entertainment. A major possibility for producing revenue is concurrent development of restaurant and entertainment facilities overlooking the marina. This should be sited and planned in the marina development and operated privately on a lease back or concession arrangement. Suggested elements are restaurant and lounge facilities, special party and meeting rooms, boat parking space and automobile parking space. Additionally, a less luxurious type eating facility could also be operated at the marina, we believe.

5. Sales Facilities. Based on statistics in the Smith Stanley Report, mentioned earlier, marinas derive only some 20% of their income from rentals of slips and moorings. A detailed list of other income sources follows below:

For each $100 of Revenue:

Amount	Source
$19.43	rentals from slips and moorings
13.01	the sale of accessories and equipment
11.73	repairs
10.50	the sale of new boats and engines
10.15	the sale of fuel and oil
9.96	charges for winter storage
8.23	the sale of used boats and engines
4.20	rental of boats
4.38	restaurant and bar sales
3.68	the sale of bait, tackle, etc.
2.63	sleeping quarters
2.10	the sale of groceries and ice.

The town should plan for privately operated sales facilities within the marina locus, either through specific marina zoning proposals or preferably by leasing land for such facilities within the taking area for the marina. The latter course of action will give the town more control over placement, size and appearance of auxiliary private facilities.

6. Repair Facilities. A 200 boat marina will generate considerably more repair and maintenance needs than can be accommodated at present Barnstable Harbor facilities. More land will have to be devoted to these pursuits. We suggest that portions of the present marina at Freezer Point are better adapted for this purpose than mixing the semi-industrial nature of this use with the activities suggested at the new marina.

7. Storage A 200 boat marina will require substantial winter storage area. While outdoor storage can be accommodated on the substantial areas needed for parking, more indoor storage facilities will seemingly be required, in addition to those already privately operated. We believe that such storage facilities shouldbe operated privately, away from the marina site itself, either on private or town land as shown on the preliminary marina plan.

8. Other Considerations. The Maraspin Creek marina proposal opens the door for many high tax-producing private developments on nearby lands. The marina should help to upgrade the present character of development in Cobbs Village. More important, marina construction raises the possibility of luxury resort facilities of a "boatel" nature on the now vacant high land overlooking the marina site. This appears one of the few places in the Town of Barnstable where this type of activity could be located without friction from the nearby residential areas. With access provided to the marina by a new highway, such development should not affect Barnstable village qualities and would add considerably to the non-residential tax valuation while broadening the recreational facilities available in Barnstable. However, we would not recommend planning for this type of development until the zoning ordinance were appropriately changed to reflect ahigher degree of control over siting, landscaping and construction.

V. Maraspin Creek Marina Design Features

- Construction of new access highway facilities, by-passing Phinney's Lane and Barnstable Village, to pass through the former fair grounds. This will provide access to the marina and Cobbs Village. Present bridge on Millway Street to be removed, and Millway Street diverted easterly along the southern margin of the marina to meet the new proposed access highway. Commerce Road to be widened.

- Slip Space	20-30 ft. boats	40-50 ft. boats	Total
Stage I	216	50	266
Stage II	308	86	394

- 120 foot channel into and through the marina, with appropriate bulkhead construction at the westerly end to control and direct tidal flow.
- Ten foot wide floating finger piers, ranging in length to 400 feet, with gangways, located as illustrated.
- Parking lot development to accommodate 700+ cars; 400 at Blishes Point and 360 at two landscaped lots south of Commerce Road located as illustrated.
- Floor space and parking facilities for restaurant, gasoline, food, marine sales and services within the marina as illustrated. Space for charter boat operations within the service area.
- Repair and winter indoor storage to be provided at Freezer Point on town and private lands
- A small boat launching ramp, 100 feet in width as illustrated.
- Use of displaced fill from marina dredging to raise the level of Commerce Road and Blishes Point to a level not subject to flooding.

The marina design herewith is subject to engineering and architectural consideration and review and should not be considered a construction diagram.

SECTION V BEACHES

At present the Town of Barnstable owns six salt water beaches, five on the south shore and Sandy Neck on the north shore. Determination of the capacity of the various beaches is the subject of this report section. Maximum capacity is based on 1000 persons per acre.[1]

The following table gives the name, location, parking space and acreage of each of the six beaches.

Beach Name	Location	Parking Space*	Area of Usable Beach
Sandy Neck	W. Barnstable	247	696.4 acres
Dowse's	Osterville	176	5.3
Craigville	Craigville	945	11.0
Sea Street	Hyannis	232	2.6
Kalmus Park	Hyannis	224	23.5
Ocean Street	Hyannis	450	1.3
Total		2274	740.1 acres

* as of May 1961.

On Nantucket Sound, the five beaches could accommodate 43,900 persons based on 1000 people per acre of beach. Even at this density, there would be room to move (see footnote below).

Only Ocean Street, the smallest of the beaches, could approach maximum density without increasing the number of parking spaces.

1. Maximum capacity was based on two persons per average size blanket with one foot of space around the blanket, which would leave two feet between blankets.

A brief analysis of other beaches follows below.

Dowses Beach is at present used only by town people as a sticker is required. If the beach were designed for maximum use it could conceivably accommodate 5300 people. Parking would have to be increased by 1145 spaces or nearly 7 times the present number (based on an average of 4 persons per car). The only way this could be done without disturbing the beach would be to fill land to the north of the present parking lots and to fill the pond west of the first parking lot for parking. The Planners do not feel that this beach should be overly developed as it is in a residential area and its access is difficult to improve. However, the Planners believe that the present parking lot should be expanded to about 350 cars which would permit some 1400 automobile-using residents to use the beach. Later, as the town (particularly Osterville and Centerville) grows, facilities at Dowses will have to be expanded, but eventual use should be limited to about 2000 persons, which could mean some 500 parking spaces.

Craigville Beach at present accommodates more people than any other Barnstable beach yet both Kalmus and Sandy Neck have much more usable beach area. It would be possible to increase the present Craigville capacity to about 11,000 people, provided parking was increased by another 1615 spaces. This could be done across the

street to the north, but the traffic problem created would be more than the present roads could cope with. The present most easterly lot which now has 320 spaces could be increased in a notherly direction to accommodate about 500 cars, but the Planners believe that no further major expansion of parking facilities beyond these recommendations should be undertaken at Craigville.

Sea Street is capable of handling some 2600 people and probably should be made to do so in the future as the need becomes apparent. This area is easily reached and close to Hyannis. Present parking facilities would have to be expanded by about 400 spaces. This could be done by filling the swamp land on the north side of the road across from the beach. This increase should be completed after further development of Kalmus Park.

Kalmus Park is the most likely beach for early expansion. If used to its maximum it could accept some 23,500 persons. This would require about 5651 additional parking spaces which would take up some 30 acres of land. Any development of this size is out of the question. The Planners do feel however that parking for an additional 1000 - 1500 cars should be provided over the next few years. Land could be developed on the east side of Ocean Street north of the present access road for this purpose.

Sandy Neck This great natural reservation should be developed for multi-purpose recreation, not for bathing and beach activities alone. Theoretically, if developed for beaches, Sandy Neck could probably hold more people than Coney Island and Jones' Beach combined.

However, the Planners would hope that its beach uses be expanded only in such a way as to preserve the wild beauty of the area. This implies smaller parking lots carefully sited on the landscape, development of hiking and beach buggy trains, prohibitions against free vehicular use of the total landscape, and permitting no more people to enter than can be accommodated at parking lots. The town should secure a landscape development plan for the area before constructing any more parking space. Eventually, we expect that something on the order of 2000 - 3000 parking spaces will be required at Sandy Neck. meaning some 10,000 people using the beach at peak times. This figure appears a maximum if the area is to be preserved from over-exploitation.

SECTION VI TOWN OFFICE BUILDING

The Barnstable Town Office Building of 1926 could not be expected to accommodate all the governmental office functions of the community 35 years later. Even with the additional office spaces created ten years ago, the building cannot adequately meet the demands of 1961, to say nothing of anticipated growth of town office functions. Without question, the town requires additional municipal office space. Where this additional space should be located is a question which has been put to the planners through the Planning Board by the Board of Selectmen. Without going into precise space footages, building schedules or close costs, which are beyond the present scope of our services to the community, we have prepared the following paragraphs to help guide the community toward a decision on future governmental office space.

The Main Street Town Office Building and Environs

The existing colonial brick and white trim town office building of 1926, with the 1951 additions, is located on the south side of Main Street, between Ocean Street and Pearl Street, on town-owned land of some 2.6 acres. Adjoining the town offices on the west is the Hyannis Public Library on 0.4 acre, owned by the Library Corporation. Adjoining the town offices on the east is the colonial

brick and white trim U. S. Post Office Building, on federal land of 0.4 acre. The Post Office Building is being enlarged. East of the Post Office are the Cape Cod Art Association and the Masonic Temple.

Behind these buildings, southerly, is the Community College on some 3 acres of town-owned land, leased to the state. The two 1897 buildings are the former State Teachers College, wisely bought by the town in 1953.

Behind the town office building southerly is the central downtown public comfort station and the municipal parking lot of 125 car-spaces, reached from Main Street by paved narrow driveways, one on each side of the town office building. This town land goes through from Main Street to South Street. It abuts the Community College property and spreads out behind the library property.

On the north side of Main Street, across from the town office building, are a movie theater, retail stores and offices, including the Telephone Company Hyannis Business Office.

Town Office Function Decisions

Pre-requisite to any analysis of town office space needs are some policy decisions about the geographic location of town office functions, and about existing public buildings and lands and business growth downtown.

A) Should the town encourage long-term continuance of the existing large non-taxable public land holdings downtown between Main and South Streets?

Increasingly, it has occured to the planners that business will have to be concentrated mainly between South and North Streets if downtown is to be kept alive and dynamic, with adequate circulation and parking in the business district. Thus, the town office question becomes the first in a series of questions and decisions about planning for public land holdings between Main and South Streets and the long-range land use and circulation goals for this area.

B) The new Barnstable Community College occupies the two former State Teachers College buildings, on only 3 acres of land. Can long-range occupancy of these buildings for this purpose be expected?

Even though the college buildings are mainly in good condition, they are 64 years old, and not particularly suited for college teaching. The site does not permit much expansion. Parking will become a problem as the college grows.

The planners feel that the success and growth of the college will itself call for relocation of college uses outside downtown. When the college eventually rebuilds, the planners recommend it be somewhere on the Hyannis major circulation system, convenient for student traffic from all over Cape Cod.

Also, for prudent long-range planning for downtown growth, the planners suggest that some of the public holdings south of Main Street be put into business use in later years, retaining some of the land for green space and for off-street parking.

C) Should the town begin to look toward construction of a civic center complex which can group many community and municipal functions in an attractive and harmonious whole?

Barnstable is rapidly growing; the town government seat is headquarters for 60 square miles of potentially developable land enclosing 7 villages. New governmental functions can be expected. Supplying educational and recreational facilities for all ages are already paramount roles of municipal government and can be expected to increase in importance as the year-round population ages and grows in numbers. The town's great size coupled with the fact that the villages are distinct and separate will mean that most new governmental programs will have to be centralized in Hyannis, either from the standpoint of administrative costs, or for fear of favoring one village over another.

From an aesthetic and functional standpoint, the strongest argument for grouping public buildings in a civic center is the increased importance, dominance and aesthetic significance they gain when each building becomes an integral part of a harmonious composition. This opportunity is lost if buildings are erected at scattered locations. A civic center may thus become a symbol of the civic interest and cultural attainments of an entire community.

The planners believe that at this juncture, considerable thought should be given to the opportunity of constructing additional town office space in a new location as a start

toward an eventual civic center in which many community functions could be combined, such as government offices, recreational buildings, art and theater buildings, possibly police headquarters, fire headquarters, and maybe a Cape Cod museum, all at some suitable location in Hyannis.

D) Civilian Defense matching funds up to 50% may be available to the town to help in construction of an emergency Government Control Center which, as we understand, could be used for other purposes when not needed for Civilian Defense. Matching funds are also available for communication equipment.

Such funds could help construct the basement of any new town office building or addition. The Emergency Government Control Center could be of immense benefit to the community during hurricanes or other disasters. There would be the obvious benefit of town hall space partially paid for by the federal government. The position of Hyannis in Central Cape Cod makes it geographically a natural location for such a center.

E) Should certain town government functions remain downtown while others are removed to make needed space available? Does the location and good condition of the town office building preclude possibilities other than addition?

Architecturally speaking, space can be added to the present building, but any large addition will change the proportions and appearance of the existing building, and would necessitate extensive internal and external changes in the

in the existing building as well. This would be a difficult job. Done properly, it could also be expensive. With careful mating of the old and the new, a building could result which would serve town purposes, but we suspect would suffer again from inflexibility .

Present Building

The existing town office building contains about 14,000 square feet total floor space, counting two floors and the basement. Close to 10,000 square feet are taken up in office spaces and vault; the remainder is in corridors, stairwells and non-office areas. The replacement public hearing space in the basement of the building needs better lighting and better acoustics; also the pillars obstruct the view in the room. There is no space for conferences or meetings.

Architecturally, the building circulation does not "work" well. Space divisions are not flexible. As in every town, new governmental functions have been added and others greatly expanded. This trend can only continue in Barnstable as it grows in year-round population, and as the town government is called upon to supply increased services and to undertake new functions.

The functions currently housed within the existing Main Street town office building are the offices of:

Selectmen	Building Inspector (Gas, Electricity, Plumbing)
Board of Health and Sewer Department	Town Treasurer
Assessors	Town Clerk
Tax Collector	Welfare
Veterans Services	Housing
Civil Defense	Parks (basement)

Already located elsewhere (or floating) are:

Fire Chief, also Forest Fire (Dottridge)

Police

Recreation, Centerville

Tree Warden, Osterville

Town Beach Committee

Town Planning Board and
Zoning Board of Appeals

Superintendent of Schools
and School Committee

Town Office Space Requirements

Without precise and detailed study, including conferences with each town department head, it is impossible to say just how much additional town office space is actually required, with what facilities. No specific space standards for town governmental office functions appear established or generally accepted. However, as an aid to answering the policy questions set forth, it could be surmised that during the next ten to twenty years, the town offices would need to double their existing 10,000 square feet of net usable floor space to 20,000 square feet total. Perhaps an additional 5,000 feet are needed immediately, and another 5,000 feet in ten years or so.

To commit the town to ultimately double the town office floor space downtown at Main Street seems at this writing an unwise

proposal. It would take away needed parking spaces; it would increase both traffic load and parking demand; it would almost inevitably spoil the looks of the existing building; and it would cost more money than building elsewhere an equivalent amount of space. Also, less total floor space would be required in an efficient layout in a new location, than would be required downtown, hitching new to old and attempting to make it work well. Then there are items like fireproof vaults for records, and heating plant and toilets in the building. These factors and others -such as accessibility, impact on abutting land uses, and on property taxes- are considered further on.

Alternative Actions

Four alternative actions could seemingly solve the town office space question:

1) Raze the existing building and construct a new and larger building some where on the present site.
2) Keep the existing building as is, and construct a new building elsewhere, moving some functions to the new one.
3) Construct an addition to the existing building, say on the back, extending into the parking lot (adding a third floor seems unwise on account of elevators, and the question of foundations).
4) Sell the existing building and site to a depth of 150 feet from Main Street, for private use; retain the remainder in town ownership for off-street parking; build a new town office building on some new site.

Considering each of the alternatives in the order given above, we have developed generalized cost information and commentary as follows:

1) To remove the existing building and construct a new building of 20,000 square feet on the present site would cost in excess of $400,000 at $20 per square foot, without estimating the cost of razing the present building.

   The available town-owned land to the rear of the present building could continue to be used for town employee parking, although parking there for business use would be curtailed as town employment increased.

2) To keep the existing building, and to build a separate one of some 5,000 square feet in a new location on town-owned land to meet existing demands for increased town office space, would cost an estimated $100,000. Another addition would probably be required within ten years, costing another $100,000, bringing the total outlay to $200,000 or more.

   The disadvantages of this approach are obvious. Separating governmental functions would not improve governmental efficiency, and would mean continuing the use of an existing building which is poorly laid out for the functions that it now serves.

3) Expansion of the present building to create a total of 15,000 square feet usable office space would cost $100,000. The addition would by necessity be in the rear of the existing building. This would decrease existing parking space, while adding a greater demand for employee parking space as town government expands.

Such expansion would require removal of the comfort station and construction of a new one. The existing building would require extensive remodeling inside to obtain an overall architectural scheme that functioned well. This might cost a further $50,000 over the cost of any building addition.

A further addition would probably be required within ten years or so, at the cost of another $10,000. Unless the first addition was designed for a second floor, further extension into the parking lot would be necessary. The lot would have to be shared by a growing number of town employees, college students and faculty, leaving decreased space for shoppers or citizens conducting business in the town hall.

4) Constructing a new building on vacant town-owned land could cost some $400,000. This could be of 20,000 square feet to serve the town's needs for the next fifteen to twenty years.

The assessors estimate that the existing building could be sold for about $180,000. Thus, the cost of new

town offices could be about $220,000, plus interest. In addition, a tax benefit to the town of over $5,000 annually could accrue from commercial use of the existing town office building and land, assuming an assessed valuation of $100,000 or more on the property.

The following table outlines the major outlays under the four alternatives; possible federal participation in basement construction is not shown (probably greatest in alternatives 1 and 4).

1) Demolish existing building and construct a totally new building on present site.

Building, 20,000 square feet	$400,000.
Interest, if bonded for 20 years at 5%	210,000.
	$610,000.

Demolition cost?

2) Construct town office space addition elsewhere in two stages, and continue to use present building.

Building, 5,000 square feet, first stage	$100,000.
Interest, bonded 20 years at 5%	52,500.
Building addition, second stage	100,000.
Interest, bonded 20 years at 5%	52,500.
TOTAL OUTLAY	$305,000.

3) Construct a new addition to present town hall.

Building, 5,000 square feet, first stage	$100,000.
Alterations to present building	50,000.
Interest, bonded 20 years at 5%	78,750.
Building addition, 5,000 square feet, 2nd stage	100,000.
Interest, bonded 20 years at 5%	52,500.
TOTAL OUTLAY	$381,250.

4) Construct totally new building elsewhere, sell present site and building.

Building, 20,000 square feet	$400,000.
Less sale of present building	180,000.
	*220,000.
Interest on $220,000, bonded 20 years at 5%	115,000.
	*335,500.
Less annual tax of $5,000 a year for 20 years	100,000.
TOTAL OUTLAY	$235,500.

Outlay Considerations

More detailed space and cost figures must be developed under the special architectural study money proposed in the 1961 Town Meeting Warrant.

If the town should elect to pay construction costs in a shorter time than anticipated above, the total outlay for an addition or a new building would be less. Probably interest on Barnstable municipal bonds would be less than 5% in a favorable money market. Also the town might choose not to bond the whole amount. Construction costs estimated at $20 a square foot are admittedly in the high cost range.

In Brunswick, Maine, following our recommendations, town government has moved into a new town hall, after selling a 100 year old building downtown. The new 12,000 square foot building which includes court house, jail, police headquarters, a handsome conference room, and municipal offices, cost $12 per square foot to construct. While not expensive, this attractive building

is completely modern and functional. Space is smaller than in the old building, but markedly more efficient. Most important, except for $43,000, the building has been paid for by the sale of the old building and site. Anticipated taxes on the new commercial property to be erected on the old site will pay the remainder of the town office building cost.

Another factor not calculated on our cost alternatives is civil defense participation in construction. Up to 50% of total costs for certain portions of a new building or an addition might be borne by the federal government. This can be ascertained after the town official family makes some preliminary decisions on its town office building goals.

Recommendations

In previous paragraphs are outlined some of the questions the planners have considered important in the town hall problem, as well as some preliminary cost figures.

We recommend that the town construct a wholly new building in a new location along lines suggested in alternative 4. Even though the present town office building is solid and well maintained, we feel that it may have outlived its usefulness.

Adding new space to the existing, even with extensive gutting and reconstruction, will only result in a confused building. The addition would decrease space for downtown business parking and would increase town employee parking demand.

Until town office space needs are more closely determined,

and until the new town building location, Community College requirements and downtown Hyannis circulation and parking requirements can be meshed together in a well-considered plan, we have to recommend that the Selectmen refrain for a time from leasing to anyone,or agreeing to lease or sell to anyone, any of the existing town-owned lands in downtown Hyannis south of Main Street, or any town-owned lands between or in the vicinity of the National Guard Armory and the Junior High School.

In the long run, we believe that town municipal office space requirements, downtown business growth prospects, and community aesthetic and economic ends would be furthered by a totally new building, and sale of the present town building site for business purposes.

SECTION VII TOWN EQUIPMENT GARAGE

The present town garage, located at the corner of Route 28 and Bearses Way is well-positioned to serve the needs of the town--close enough to Hyannis, yet on major highway facilities which permit easy movement to other portions of the town. Nearby vacant land in Sewer District ownership is available for expansion needs over the foreseeable future.

The three buildings which comprise the town garage facility have been built and improved over the years since 1941. The main building, 100' x 50' with a large ell, is heated and in good condition. Of the two out-buildings, less solidly constructed, one is used by the Park Department and the other by the Highway Department for storage, sign maintenance and construction equipment.

Major town garage need appears to be more indoor storage space. Presently, the following equipment is left out of doors year-round for lack of indoor space: one beachworker, one rubber tired loader, one sand spreader, one bulldozer, one street sweeper and drag brooms, one F.W.D. snow fighter and five plows. Such expensive equipment should not be allowed to deteriorate through exposure to the elements.

Presently, the Highway Department does most construction and maintenance work for the Park Department, Sewer Department, Board of Recreation and School Department. Parking lots are

also under their jurisdiction. This is in addition to their regular street and highway functions, but appropriation, timing and scheduling of these other functions result from other departments, not integrated into the work schedule of the Highway Department.

It appears to the planners that Barnstable has reached a point in its growth that an integrated public works department is needed. Such a department would encompass engineering, work scheduling, construction and maintenance for all Barnstable physical improvements. Greater economy and efficiency of operation would result from 1) mass purchase of supplies, such as gasoline, for all town equipment, 2) more effective use of personnel through long range work scheduling, 3) a better picture of town needs through a single, unified annual budget, 4) a lessening of equipment and personnel duplication, 5) a less diffuse administrative chain-of-command. The town should study the possible adoption of such a department.

SECTION VIII POLICE STATION

The police station located on Elm Street in Hyannis was built in 1938 with an addition built in 1960. A garage for vehicle maintenance is located next to the headquarters building.

The building is in good condition, has adequate space for the present and is equipped to meet the needs of the department. The 1960 addition provided twelve more cells to the eight existing, including two cells for women and one for juveniles.

Mobile equipment includes six cruisers, a motorbike and two eighteen-foot police boats. The boats are used during the summer for patrolling Hyannis and Osterville waters.

The police force consists of thirty year-round officers including the chief and janitor-mechanic. During the summer the force is augmented by thirty-two summer officers, sixteen stationed at Hyannisport due to Presidential summer white house traffic and protection problems. The other sixteen are stationed throughout the town. Five State troupers are assigned to Hyannisport. Four town police officers are assigned to patrol the three beaches under control of the Selectmen, two at Craigville and one each at Kalmas and Ocean Street.

Based on national standards of two and one-half policemen for each thousand population, the wintertime force should consist of thirty-four officers and the summertime force of between sixty-eight and one hundred officers. Barnstable almost meets these standards.

The Police Station is well located to serve the police protection needs of the town. Eventually more space will be needed but a Hyannis location appears needed for the foreseeable future because of the urban nature of this village and its heavier police case load.

SECTION IX BARNSTABLE AIRPORT

I. Introduction

The present Town of Barnstable airport facilities just south of Mid-Cape Highway north of built-up Hyannis should become an increasingly valuable community facility in the years ahead. With construction of the new control tower, the recent addition of I.L.S., and planned extension of the NW/SE runway, Barnstable Airport will have facilities superior to any community in the state of its size. The I.L.S. at Barnstable Airport will permit operation at 200 feet vertical ceiling and one-half mile horizontal visibility. This will make Barnstable Airport an alternate diversion facility to Logan International Airport for most aircraft types including the 880 jet. This, plus Barnstable increasing highway proximity to Boston, should cause Barnstable aircraft traffic to increase beyond the normally expected increases in future years to result from recreational air travel.

The tables below indicate landings and take-offs at Barnstable Airport for 1959 and passengers enplaned and deplaned for the same year. Traffic is increasing. In the six and one-half months of new control tower operation, over 19,000 landings and take-offs have occurred. This should result in an annual

figure this year in excess of 28,000 landing and take-offs, the airport manager reports.

TABLE I

Barnstable Airport: Detailed Landings & Take-offs, 1959

Aircraft Movements	Scheduled	Itinerant	Total
January	184	684	868
February	176	567	743
March	220	685	905
April	180	787	967
May	294	1,986	2,280
June	538	3,713	4,251
July	702	3,511	4,213
August	756	4,518	5,274
September	342	2,540	2,882
October	182	1,589	1,771
November	114	1,556	1,670
December	108	1,044	1,152
Total:	3,796	23,180	26,976

TABLE II

Barnstable Airport: Passengers Enplaned-Deplaned, 1959

	Scheduled Passengers	Non-Scheduled Passengers	Itinerant Passengers
January	363	185	246
February	394	247	255
March	447	351	353
April	780	289	782
May	1,336	497	1,053
June	3,062	556	1,421
July	5,241	2,047	3,779
August	7,978	2,516	3,574
September	3,365	946	2,191
October	1,228	406	851
November	461	325	360
December	427	320	410
Total:	25,082	8,685	15,275
Total all categories:	49,042		

II. Future Outlook

The Barnstable Municipal Airport looms large in future planning for the community. Although it will continue to become a more important facility for summer recreational travel, more importantly, the airport facility is a major reason for the planners' recommendations for industrial research park development just north of the airport. While not dimensionable as yet, the planners believe that research park development may well relate closely to the European Common Market. A Cape Cod research park and corporate headquarter locus, with abutting well-developed airport facilities, could importantly serve both the national and European market.

III. Facilities Needs

Major immediate need at the airport appears to be for heated hanger space. The airport now has two small unheated hangers. Additional taxi-ways are also needed, the airport manager reports. Another need is for better fire protection in case of aircraft fire or crash. The fire chief has recommended purchase of a foam-type tanker truck for this purpose.

Although the building appears adequate in size for most of the year, airline terminal facilities are sometimes crowded in the summer, it is reported. The present building is designed for eventual expansion as space needs increase. Eventually, some form of airport motel or hotel facility appears supportable. There is adequate land for such purposes.

An unknown at this time is eventual disposition of Otis Air Force Base. While the Hyannis Airport is better located to serve Cape Cod needs than Otis, there may be pressures to make the latter the Cape Cod regional airport, should military use terminate. Important planning questions about re-use of Hyannis Airport facilities would then be raised.

SECTION X SHELLFISH

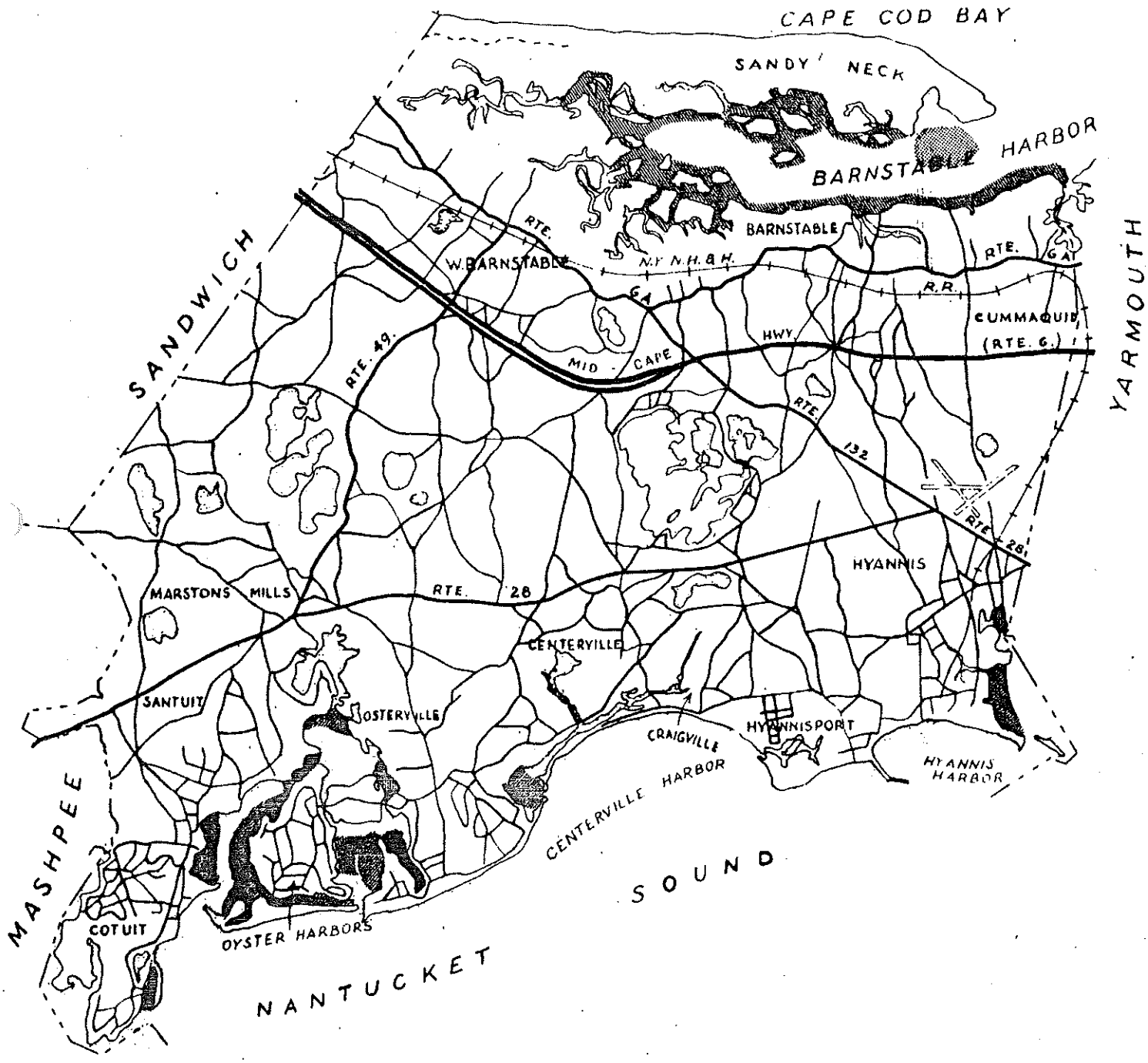
Barnstable shellfish resources are an important source of revenue and employment for town residents. The conservation report elaborated upon shellfish location and yields. Over 120 commercial shellfish licenses were issued in 1960 providing town residents with considerable income. While this source of income is important, theplanners believe that the shellfish resources of Barnstable Township will increasingly become a recreational factor rather than an employment factor. Even so, if as capably managed in the future as today, Barnstable shellfish areas should continue to provide income for some town residents in future years. However, we expect increasing "family-use" pressures as the town continues to grow. This will cut into the shellfish supply available for commercial exploitation, unless the town should elect to limit family shellfish taking.

The Shellfish Constable appears to be highly capable and knowledgable. By experimentation in releasing of seed and limiting of the fishing period, yields and sets have been improving. With additional funds, another area in the Centerville River could possibly be developed for oysters. This should be attempted, even on a small scale, as oysters appear to have the greatest value for recreational shellfish taking. Barnstable waters for oyster propagation are limited. Only

BARNSTABLE, MASS.

ATWOOD & BLACKWELL, PLANNERS, BOSTON

SCALE IN THOUSAND FEET 0 1 2 3 4 5 6 7 8 9 10



SHELLFISH AREAS

- SCALLOPS
- CLAMS
- QUAHOG
- MUSSELS
- OYSTERS
- SCALLOPS & QUAHOGS
- SCALLOPS, QUAHOGS & CLAMS

Bumps River and a potential area in the Centerville River appear to have the right combination of salinity, water temperature and bottom characteristics to support an oyster fishery.

Major factors influencing future Barnstable shellfish resources other than overfishing or failure to continue planting of seed or regulation of season, appear to be pollution and/or the affect of dredging. On the South Shore, these factors are most likely to have future impact upon the very shellfish areas which now are the most productive. This is particularly true in West and North Bays where quahog fishing has improved considerably. The effect of proposed dredging or shorefront development could considerably alter these shellfish resources. We are not marine biologists and cannot make definitive recommendations concerning shellfish, but we would recommend careful weighing of factors before large areas in West Bay are committed to dredging.

In Bumps River, future development could alter water characteristics to the point where oyster fishing is destroyed. In future zoning development, it appears wise to establish set-back lines and sewerage disposal locations far enough from the shore line to protect present water characteristics.

The shellfish areas in Barnstable Harbor (mainly clams) appear most protectable of all town shellfish areas. If the town acquires the Great Marshes and in zoning development strictly controls sewerage disposal and building set-backs, most of the shellfish resources of the harbor can be protected in the foreseeable future.

Other areas where shellfish are present but not to the degree found in West and North Bays, and Barnstable Harbor are Cotuit Bay, the Seapuit River, East Bay, Eel River, the inlet near Rushy Marsh Pond, and Lewis Bay. Poponesset Bay has not been seeded or developed because of the difficult policing and administrative problem resulting from half location in Mashpee.

SECTION XI PARKING FACILITIES

Planning for Barnstable off-street parking facilities is complicated by immensely varying summertime and wintertime demands. Not only must the community provide business parking facilities in Hyannis which are adequate for the demands experienced most of the year, but it must also develop facilities in other areas which at most are used only for three months of the year.

In general, Barnstable parking demand is of three types: 1) the central business district demand polarized in Hyannis, 2) neighborhood, convenience shopper demands at the various village centers, and 3) summertime recreational parking demands localized at town beaches.

Central business district parking demand is related to the square footage of retail space in downtown; the type of merchandising taking place in downtown; sales volumes and retail uses. Our studies show that more parking will be required, particularly south of Main Street in the West End, and north of North Street.

Off-street parking at the individual village centers appears adequate today, if peak summertime squeeze is disregarded. More parking will be required in the future, particularly in Centerville, Osterville and Barnstable Village. The town should consider zoning provisions which relate parking

to retail development, requiring that private enterprise provide adequate off-street parking space at neighborhood and village shopping centers.

Parking at recreational facilities is mainly related to the number of people that can be accommodated at the facilities and the traffic that can be safely handled on access roads. With this in mind, the Planners expect that most of Barnstable long range parking lot development will be concentrated on the North Shore at Sandy Neck, rather than on the South Shore. However, more parking should be developed at Kalmus Park and some new parking developed at Sea Street Beach and Craigville beach.

Inventory

The accompanying table lists all major Barnstable parking facilities. Not included are smaller lots accommodating only a few automobiles. Major parking facilities fall into three categories -- town-owned, town-leased, and private. Major private lots are the A & P in Osterville, A & P at the airport circle, First National in Hyannis, Stop & Shop in Hyannis, Storyland, Summer Threatre, and various restaurants and motels.

All publicly-leased lots are in Hyannis behind the stores on the north side of Main Street. Some lots on this side are also town-owned. Other town-owned space is at Barnstable Village adjacent to the county parking lot, at the major beaches, as listed, and some in-town Hyannis space south of Main Street.

MAJOR PARKING F. ILITIES 1961

Publicly Owned or Leased Facilities

A. Beaches

Sandy Neck	247
Dowses	176
Craigville	945
Sea Street	232
Kalmus Park	224
Ocean Street	460
	2284

B. Parks & Play Areas

Skating Rink	110
Ocean Street Pier	128
Barnstable Marina	27
	265

C. Village Lots

Osterville	
Community Center	20
Osterville Center	75
	95
Barnstable	
Town	85
County	110
	195
Hyannis	
North Street	400
West End	195
Ocean Street	60
Town Hall	120
Railroad	96
South Street	60
Hospital	90
Airport	170
Telephone	25
	1216
	265 metered, Main Street

Private Facilities

Hyannis

Business Districts	
A & P, Kings, Armands	550
Stop & Shop, Grants	248
First National	190
	988
Restaurants	
Chinese	125
Dinty Moore	100
Mildred's	90
Red Coach	55
	370
Recreation	
Theatre	360
Storyland	275
	635

Osterville

Business District	140

Conclusions and Recommendations

Villages

Local village parking appears adequate today to meet present demands. With anticipated population and commercial development growth in the villages, additional parking will be required. This could be accomplished under zoning by requiring off-street parking with construction of new commercial enterprise.

Beaches

Parking at major beaches should be related to beach area use and accessibility. With 945 spaces at Craigville, the situation appears to be reaching the saturation point considering the limited beach area. Town policy should be to acquire only such new parking as to round out the present parking and land use pattern at Craigville. On the other hand, Kalmus Park could accommodate more parking and more people without beach crowding, if access were improved. Sandy Neck can easily absorb more people. Dowse's Beach also appears able to handle increased crowds if parking were available. Sea Street Beach appears to have adequate parking for the amount of beach now available, but more should be developed, if the beach is extended as recommended.

Downtown

Planner's major recommendation is for immediate town acquisition or long-term lease of those lots on the north side of Main Street, now being leased, before they disappear or are further reduced in area. This has happened in the past, and is likely to occur again unless the town has outright title or long-term lease.

A parking and circulation problem could be alleviated by eliminating all parking on the south side of Main Street from Ocean Street west to North Street. This would remove ninety-one metered spaces, but should speed traffic through downtown. Parking might be prohibited only during peak traffic hours. An additional parking lot on the south side of Main Street between Sea Street and High School Road could be constructed to replace metered spaces.

Present parking accommodation in the downtown, including private lots and metered spaces from Ocean Street to North Street total some 1600 spaces. Although this is adequate for shopping during the winter it is inadequate during the summer season. Increases in college enrollment will require additional spaces in the immediate area both summer and winter.

With these factors in mind, and the plan for increased commercial activity in the West End and on the north side of North Street, the planners recommend future parking lots as follows:

1. Expansion of Ocean Street parking lot to accommodate 250 cars, the addition primarily for the use of community college until the college moves to a new location.
2. Expansion of Town Hall lot to 320 spaces to serve College, Library, Post Office and Town Hall.
3. Enlargement of South Street lot to 295 spaces with access to both High School Road and Pearl Street. This will provide space for the commercial complex on the south side of Main Street and future development of South Street.
4. Eventual development of a 300 car lot between High School Road and Pine Street with entrance on both streets to serve South Street development.
5. Development of a 320 car lot between Pine and Sea Streets with entrance from South Street and Pine Street to aid in redevelopment of the West End.
6. Expansion of existing West End lot to 1,700 spaces to serve as the major parking area for the redevelopment of the West End.
7. Eventual development of a 160 car lot between new loop road and North Street west of Bearses Way for all-day employee parking.
8. Development of 1) 350 car lot between Bearses Way and High School Road, 2) a 340 car lot between High School Road and Winter Streets, 3) a 425 car lot between Winter

and Washington Streets and 4) a 160 car lot between Washington Street and Barnstable Road, all four south of the new loop road, to aid in development of the North Side of North Street.

9. Development of a 345 car lot off Winter Street, south of North Street for aid in development of the North side of North Street.
10. Increase the North Street lot to 590 spaces.
11. Eliminate all on-street parking during the summer within the area bounded by the loop road.

The lots, shown on the detailed downtown plan map, would bring the total spaces available in downtown to 6255, not an unrealistic figure over the next ten to twenty years, considering future increases in population and retail trade. Many of the lots may be developed through private means, while some will have to be developed by the town.

The planners feel that at present the first lots to be developed should be extension of Ocean Street lot, and development of the 320 car lot in the West End.

SECTION XII HYANNIS SEWER SYSTEM

The existing sewer system serves Hyannis downtown and east end, also Ridgewood Road, Spring Street and the Brookshire Road area, and Bearse's Way and High School Road.

A pumping station located off South Street pumps all sewerage to a sewage treatment plant off Bearse's Way and Route 28. The pumping station has, at present, two pumps with a combined capacity of 1200 gallons per minute or 1.73 mgd (million gallons a day). There are space and plans for a third pump which would increase capacity to over 2 mgd. The force mains are capable of handling this amount.

The treatment plant, built in 1957, is a primary system depositing all effluent in sand beds on the same site. At present it has a treating capacity of .5 mgd. In 1961 an estimated 185,000,000 gallons were pumped to the treatment plant (an increase of some 10,000,000 gallons over 1960). This is equivalent to .5 mgd., the capacity of the treating station.

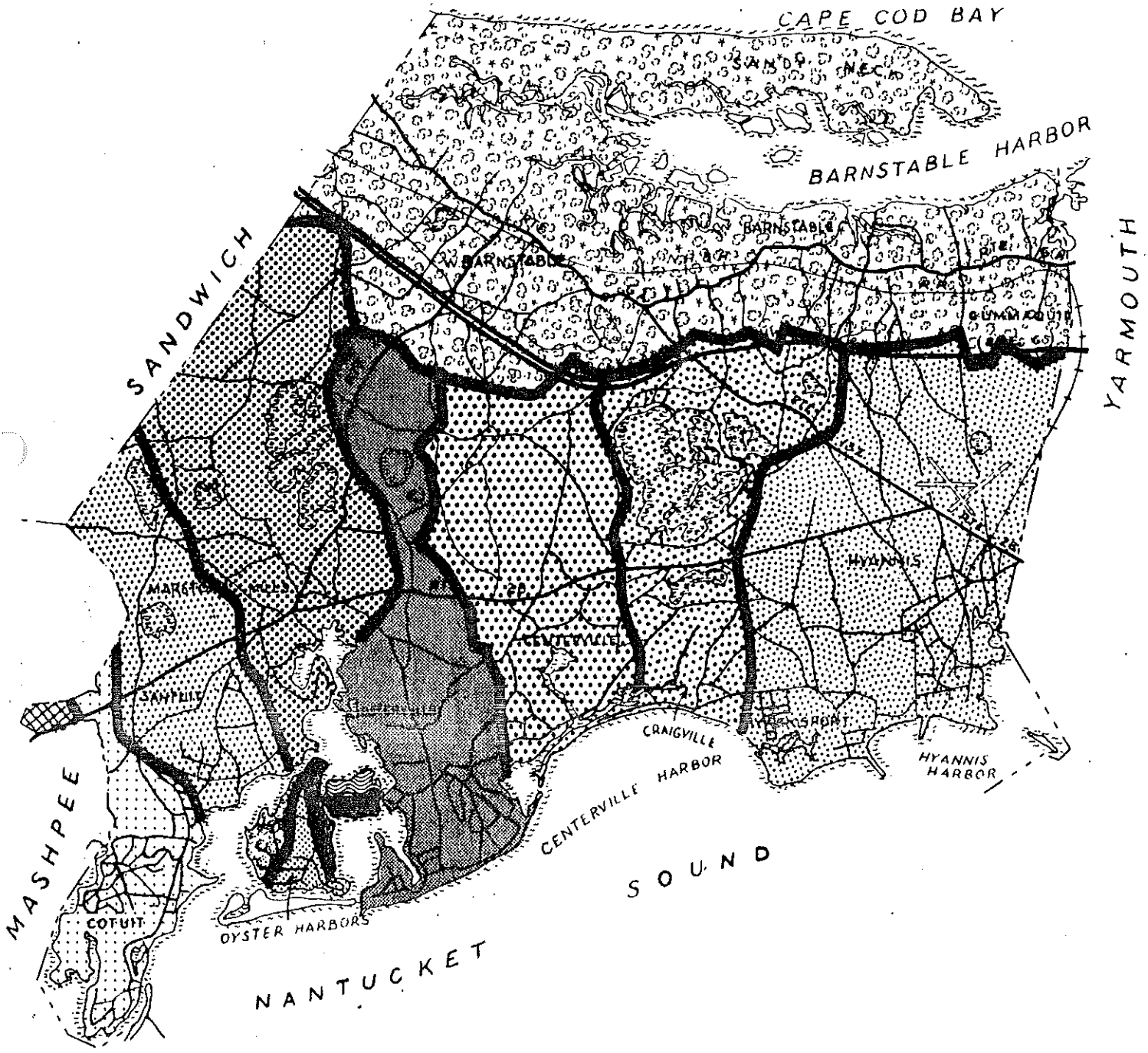
Since population in the sewered area is greater in summer it appears that present capacity has been just about reached. A new clarifier of .5 or 1 mgd would increase capacity to 1 or 1.5 mgd to permit a doubling of present yearly pumpage.

There are plans for the extension of the sewer system to serve most of the urban Hyannis area from South Street to Gosnold Street. This area is rapidly developing and it appears that sewers will be needed in the near future. Another force pump at the pumping station will also be required it appears.

BARNSTABLE, MASS.

ATWOOD & BLACKWELL, PLANNERS, BOSTON

SCALE IN THOUSAND FEET 0 1 2 3 4 5 6 7 8 9 10



MAJOR DRAINAGE BASINS

The Hyannis sewer system was planned with eventual extension of a trunk sewer along West Main Street in mind. This facility could serve the Hyannis elementary school and High School. Although there appears no critical problem in this area at the present time, the number of new homes built at a relatively high density would seem to indicate that eventual sewer construction in this area will be needed.

If the proposed research park is developed north of the airport, sewerage planning for the area will be a necessity as the large scale of such operation and the need to protect water supply sources will require an effective sewerage treatment operation. Whether this should be accommodated at the present treatment plant or at another location is a matter of engineering and Sewer District determination.

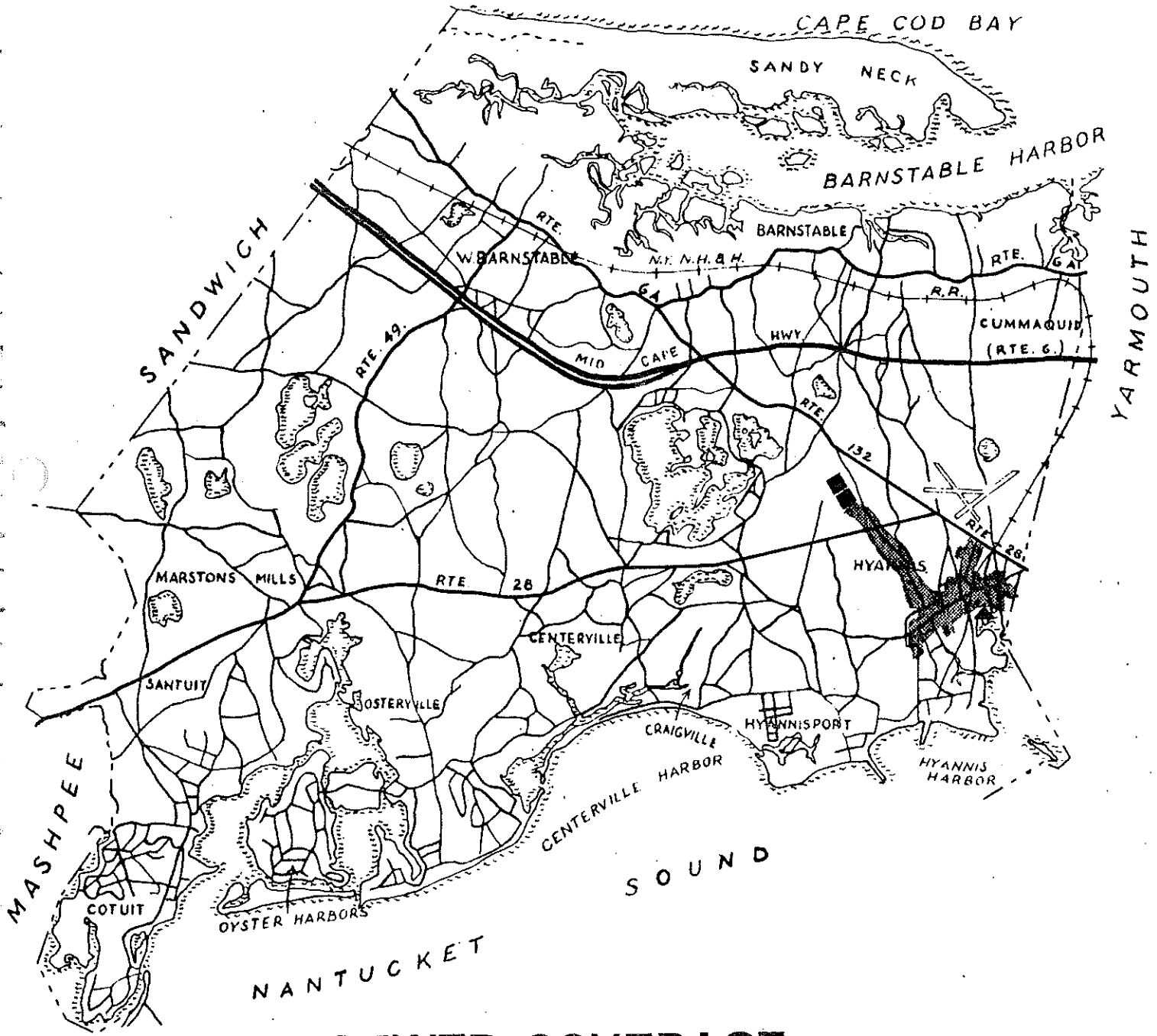
The land use and density decisions resulting from the Town Plan will in large measure determine the future sewer needs of the Town of Barnstable. Along the South Shore soil drainage characteristics are extremely good. The Hyannis sewer treatment plant is one of the few, to the planners' knowledge, that discharges directly into the ground without an outfall. However, all of the drinking water on the South Shore is also derived from ground water resources. As long as density is light enough to permit the ground to act as one large filter bed, on site sewerage will be possible in many sections of the community. But increased use of water and use of detergents and other polluting elements could in the future cause a breakdown in the delicate balance.

If so sewers may well be needed in other more thickly settled sections of town such as Osterville Center. As a general philosophy, the lighter the density permitted by zoning, the better the protection offered by stringent control of septic tank construction and location, the less the community runs the risk of needing extensive new sewer mains and treatment facilities. For this reason the planners have recommended that density be kept light in many sections of Barnstable Township as shown on the plan diagrams.

BARNSTABLE, MASS.

ATWOOD & BLACKWELL, PLANNERS, BOSTON

SCALE IN THOUSAND FEET 0 1 2 3 4 5 6 7 8 9 10



SEWER COVERAGE

AREA OF COVERAGE

SEWAGE TREATMENT DISPOSAL

PUMPING STATION

Chapter 5 Traffic & Circulation

Introduction

Vehicle flow in and through Barnstable is complicated, as is the situation Cape-wide, by massive summertime traffic increases. The problem raises an economic and design question. Should future Barnstable highway planning design standards be based on peak July 4th or Labor Day vehicle flow, or on some lesser flow requirement? Engineers do not ordinarily design to peak flow. If this were the case, Boston's central artery would be double its present width. Economics alone dictate that peak flows experience inconvenience of movement. In most cases, this means that peak morning and afternoon traffic is slowed or choked considerably, while at other times, movement is uncomplicated.

Peak movements in most communities result from the ebb and flow of vehicles coming to and from places of employment. As such, the movement is usually regular and predictable, in the morning and in late afternoon, each weekday throughout the year. In Barnstable, movement is much more capricious and variable. First, summertime traffic is more than double winter traffic. Second, summertime traffic magnitude, while definitely related to major holidays, is importantly affected by such variables as wind, temperature and precipitation. Further, weather has varying impact upon traffic in different

sections of the town.

Rain can cause major traffic jams in Hyannis, while sweeping roads to the beaches clear of traffic. Conversely, good weather lessens the intown problem, and creats more of a problem on the beach roads. While not statistically demonstrated , the planners believe that peak loads may occur, at least in Hyannis, at night and not during the day. Saturday night traffic is known to be extremely heavy in Hyannis, probably at least as high as at any other time. Weekend tourist traffic presents special peak hour flow, all arriving on a few roads Friday night and leaving Sunday night. All of these factors present problems of traffic and circulation planning seldom found in most communities.

While future traffic design criteria must be related to summertime traffic, the planners feel that it cannot be based on peak movements in summer. From a highway construction cost viewpoint, providing easy, simple traffic movement at all times of the year would be prohibitively expensive. The best that Barnstable can expect to accomplish in its future traffic planning is to provide a system of new and improved highways which can effectively move most traffic quickly and conveniently to all destinations in Barnstable. Even so, the town must expect slow-downs on peak holidays to occur. From this standpoint, the planners base their analysis and recommendations upon average summer peak season flow, rather than peak holiday weekends.

CAPE COD
REGIONAL TRAFFIC

ATWOOD & BLACKWELL
Boston, Mass.

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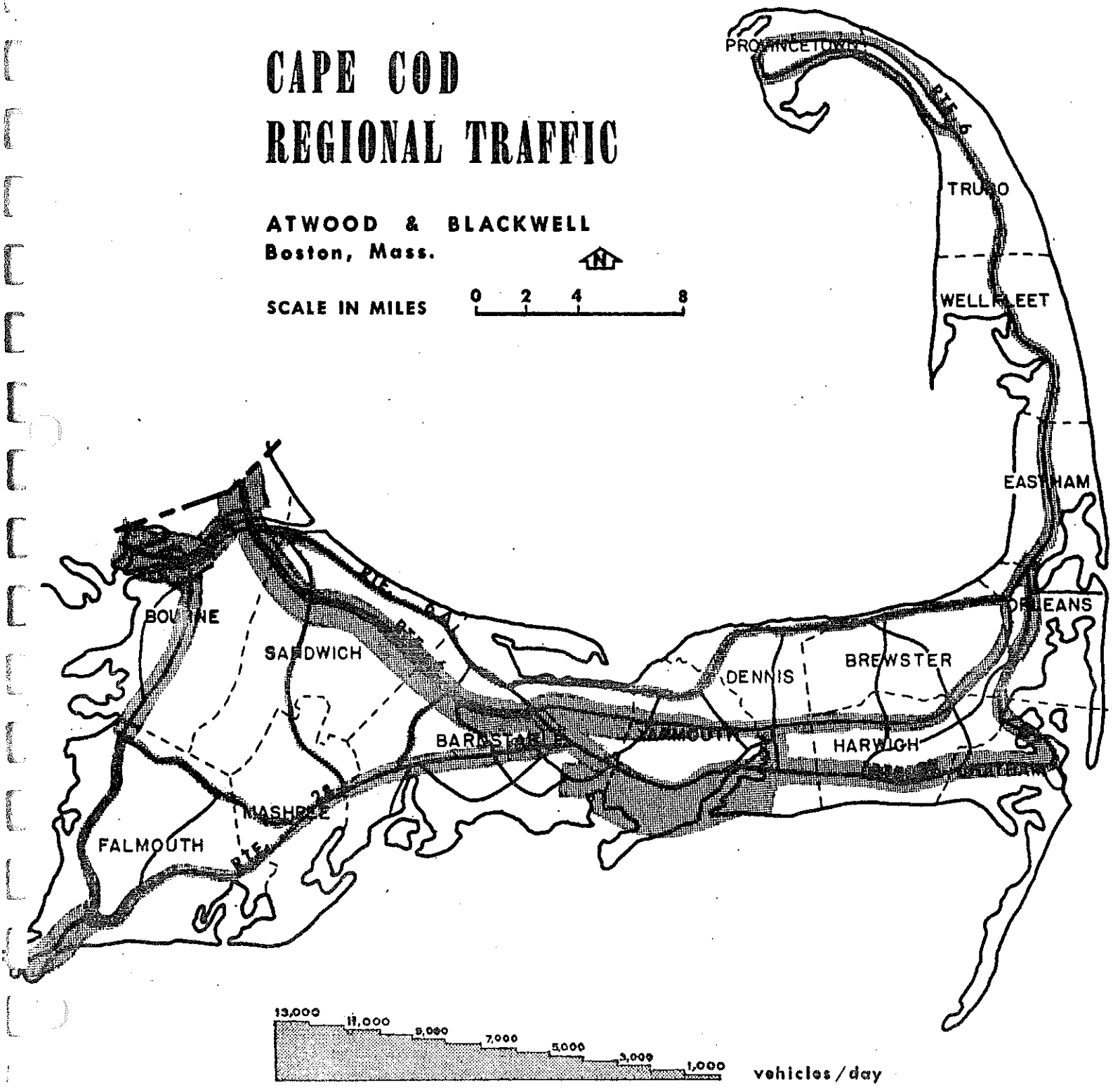
SCALE IN MILES 0 2 4 8



Traffic Movement

1959 State Highway Department traffic counts give an incomplete, sketchy picture of traffic movement through Barnstable. While certain locations are pictured adequately (Mid Cape Highway, for instance), no complete picture is available for traffic movement on major intertown arteries. Adequate data is not available for movement along Route 28 or other major traffic arteries, such as Main Street in Cotuit, Main Street in Osterville, the South County Road and County Road in Centerville.

From reported information it appears that Mid Cape Highway is the most heavily travelled traffic way in Barnstable. However, from our experiences elsewhere, it may very well be that Main Street in Downtown Hyannis is equally used.

Mid Cape Highway reported a 1957 average daily traffic load of 6257 vehicles. The summer seasonal traffic averaged 13,267 vehicles, and peak summer day saw 22,429 vehicles using this facility. From a design standpoint, peak traffic is over triple average daily requirements and seasonal demands are twice year-round average demands.

On Route 28 in 1959, the only reported statistics are incomplete counts on the western boundary of the town and in Centerville 300 feet east of the Centerville Road. These show Route 28 to be carrying roughly 8500 cars each day during the August tourist season. Counts taken at selected days during the remainder of the year reveal that off-season

traffic on Route 28 is roughly 3500 vehicles per day, less than half summer seasonal flow.

The only other useful and available traffic counts are on Route 28 at the Yarmouth Town Boundary and on Iyannough Road. On Route 28 at the boundary, summertime traffic appears over 12,000 vehicles per day, with winter time traffic about half this figure. On Iyannough Road, traffic appears to be about 8500 vehicles in the summer decreasing again by about half during the winter.

These few figures cited above are inadequate to draw any conclusions about overall townwide traffic flow. No counts have been taken on the important town-wide arterial streets, and information on major streets, where available, is not of sufficient detail. Accordingly, we suggest that before the town begin any construction plans for recommended new streets that detailed traffic counts be taken on the major streets.

Traffic Planning Factors

Without precise traffic figures, it is still possible to draw certain traffic planning conclusions from land use and buildable lands statistics. Immediately apparent goals appear to be these:

A) In Hyannis, traffic not destined for downtown should be given alternative methods to circumvert the downtown business district. This means: 1) Removing incidental through traffic from Hyannis with

by-pass streets; 2) moving traffic destined for Sea Street and Kalmus Beaches through downtown as quickly and easily as possible, without disrupting business traffic and 3) moving business traffic from the east, west and north as quickly in and out of Downtown as is reasonably possible, without disrupting residential or other uses.

Today, the primary downtown Hyannis street problem is the almost total lack of major street alignment. Major entrance streets, such as Sea Street, Bearses Way, Winter Street and North Street, terminate in Downtown rather than penetrating through the built-up business district to complete potential circulation loops. To correct this situation, Sea and North Streets ultimately must be extended. This alone will not provide a long term solution, however.

The planners foresee need for a single, new, high capacity roadway to provide entrance to downtown and to the beaches beyond downtown. The logical course is use of the old railroad right-of-way through downtown and beyond to the beaches. Constructed along limited access lines, with probable exit points at South Street, Main Street and extended North Street, this projected facility could guarantee continued Hyannis retail trading dominance. It would contain Main Street business by stopping any eastward business creeping, and

would provide a logical downtown loop road consisting of North and South Streets, which could move downtown business traffic for the foreseeable future, while transporting beach traffic through downtown without disrupting business. This new facility could also be used to open up for business use more of the land between the railroad and Barnstable Road if this were found to be desirable after study. The only problem not easily resolved in citing and planning for this necessary facility, appears to be the location and linkage of its northern terminus near the airport. Here, it appears essential that early consideration be given to joint planning consultation with Yarmouth to determine how the highway link can best serve the two communities.

The planners initial reaction to placement of the facility calls for eventual widening of Iyannough Road and relocation of portions of this highway so that it passes into Yarmouth northerly of its present location. The new downtown feeder, along the Old Colony right-of-way would be tied into a rotary or interchange also northerly. Built to proper standards and limited as to access points, these highway improvements and other related town-wide improvements can serve Hyannis' major circulation requirements for the foreseeable future, we believe.

Townwide

Barnstable is served townwide by highways of three calibres. Mid Cape Highway is the most modern and most capable of moving considerable traffic. It could carry at least twice the traffic it now moves on its peak summer days. Next in movement capacity is Route 28. This facility could carry much more traffic but its potential is limited by the possibility of future development. Route 6A, the major northern artery in town could also carry more traffic, but widening would be disastrous to north shore appearances. Fortunately, Mid Cape Highway is built close enough to Route 6A to permit additional interchanges on this expressway if traffic on Route 6A reaches the breakdown stage. Of lesser calibre, but immensely important is the old wandering network of roads which distributes traffic over most of the town's surface. Some of these roads can be made to carry more traffic by widening and other improvements. But the planners feel that Barnstable aesthetic features will suffer considerably if major townwide changes in landscape are made only to accommodate peak summertime traffic loading.

The planners believe that Banrstable traffic for the foreseeable future can be accommodated without extensive highway changes throughout most of the town if the community accepts the following goals:

A) that each of the villages with the exception of Hyannis be kept village-like in character and not thrown open to residential development of high intansity.

B) that business use in the individual villages be limited to convenience shops for the villagers alone, that no business uses be allowed to develop which depend upon a regional shopping population for livelihood.

C) that Route 28 be widened in time to serve as a semi-limited access parkway to distribute traffic throughout the South Shore Barnstable Villages and to move through traffic around Hyannis and onto the Mid-Cape Highway. Mid-Cape Highway with improved access shall serve the needs of north shore villages.

D) that highway oriented business along Route 28 and other major Barnstable streets be contained and located such that it does not defeat efficient traffic movement on these streets.

E) that inland residential development be kept at relatively light densities so that future traffic generation from these areas does not overburden the planned capacity of an improved Route 28.

Essentially the goals cited above envisage Hyannis as the commercial center of Cape Cod. It would be reached by a high capacity modern highway passing directly through downtown and tied into an improved system of older streets.

Throughout the rest of Barnstable traffic from each of the individual villages would be carried on improved existing streets where possible. These streets would then be tied into a major circulation network composed of Mid Cape Highway and a Route 28 parkway. These two major facilities would meet at an interchange northwesterly of the Barnstable Airport.

Chapter 6 Population Expectations

The population of Barnstable increased from 4023 in 1890 to 13,465 in 1960, as shown in the following table.

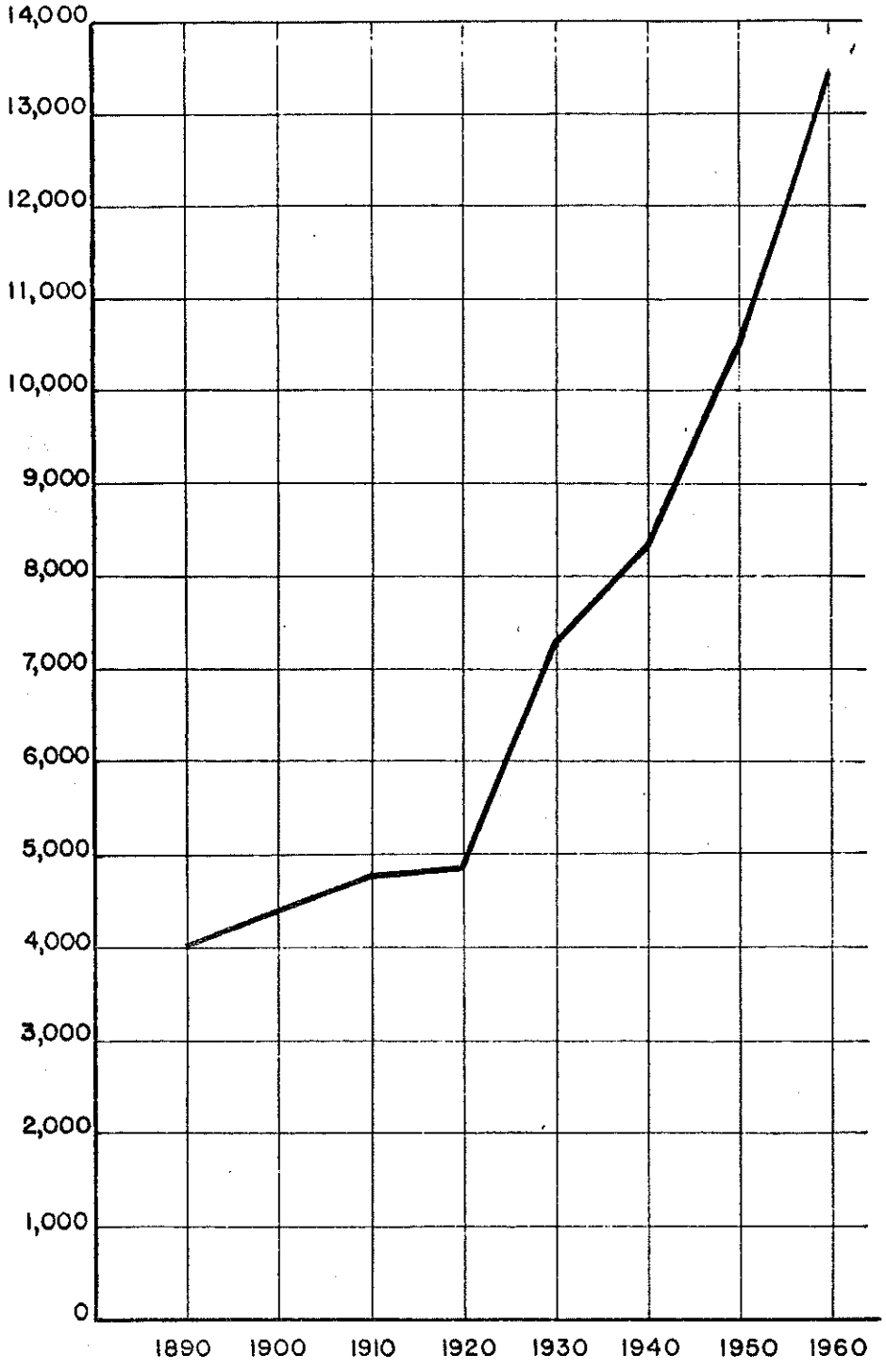
Barnstable Population 1890-1960

1890 - 4023	1930 - 7271
1900 - 4364	1940 - 8333
1910 - 4676	1950 - 10,480
1920 - 4836	1960 - 13,465

During this seventy year span, while population rate fluctuated, a population increase of 234% occurred. Slow but steady growth occurred between 1890 and 1920. Between 1920-1930, a 50% increase occurred, the heaviest Barnstable increase recorded since 1890, and surpassed in numbers only by the 1950-1960 growth. The 1920-1930 growth can probably be attributed to the boom period of the twenties and use of the private automobile which for the first time made Cape Cod easily accessible.

Since 1930, growth has been steadily increasing both in number and percent. The ten year growth of 2,985 between 1950-1960 represented an increase of 29%. Significantly, almost half of the increase, 1,409 persons, resulted from in-migration. Barnstable natural increase was 1576 persons, as shown in the following table.

BARNSTABLE, MASS.
POPULATION GROWTH 1890 - 1960



Year	Births*	Deaths*	Natural Increase
1950	236	124	112
1951	334	142	192
1952	304	139	165
1953	265	125	140
1954	271	157	114
1955	321	147	174
1956	302	142	160
1957	296	132	164
1958	337	149	188
1959	353	186	167
	3019	1443	1576

* State of Massachusetts, Dept. of Vital Statistics

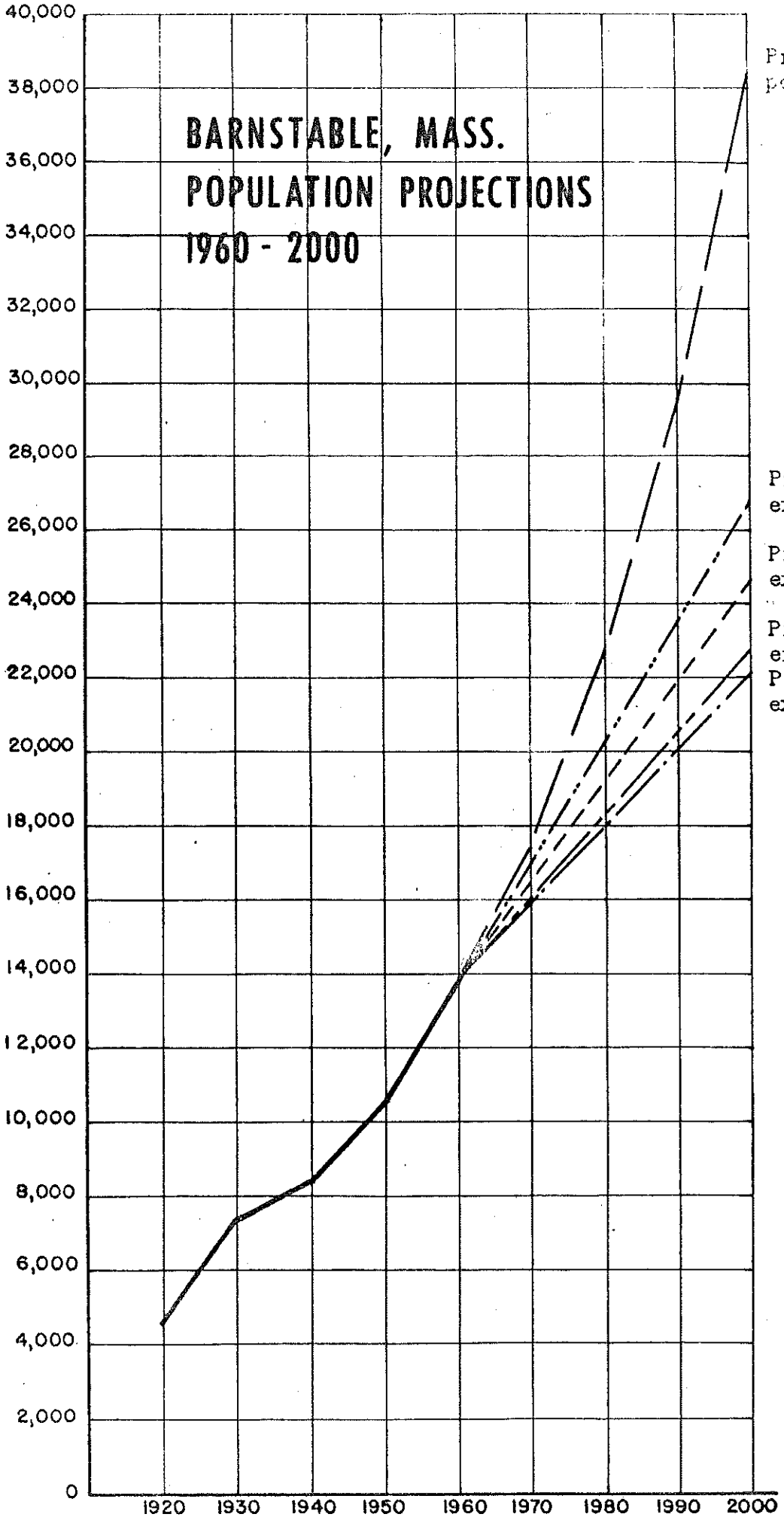
A key to summertime population is revealed by building permit numbers and population expansion. During the period 1950-1960, 2213 building permits were issued for new residential dwellings. If all were built and that ten year population increase were divided by new homes, the average increase in population per dwelling would be only 1.35 persons. Computing only in-migration against new home construction results in a figure of only .64 persons per dwelling unit. This indicates that a large number of new homes are used as seasonal residences, as the average number of persons per Barnstable household was over 3.0, according to 1960 Census.

The Planners feel that Barnstable will continue to grow at a rate similar to, or greater than, past growth trends. This is based on the facts that 1) there is a great amount of vacant buildable land (nearly 22,000 acres);

2) Barnstable is ever closer to large population centers as a result of expressway construction; 3) Barnstable is the present employment center of the Cape; 4) the town has a favorable tax rate; 5) more families are owning two homes and retiring to their vacation homes at the end of their working lifetimes; 6) research industry could locate in Barnstable creating additional employment opportunities; 7) the community college will tend to increase population; 8) the community has excellent physical character--excellent schools and good natural public and private recreation facilities.

Future Year-round Population Expectations

Predicting future population with accuracy is a difficult process, as many demographers have sadly experienced. At a large scale, state or national, the prediction process is more easily and accurately accomplished. In individual communities, the process is much more nebulous and problematic. Sudden economic changes, physical changes --such as new highway construction--can have an immediate, powerful, positive or negative effect upon population, disrupting the most detailed study and estimate of population. The accompanying graph plots Barnstable growth through 1960 and attempts to predict future population based on past experience.


BARNSTABLE, MASS.
POPULATION PROJECTIONS
1960 - 2000
40,000
38,000
36,000
34,000
32,000
30,000
28,000
26,000
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1920
1930
1940
1950
1960
1970
1980
1990
2000
Projected on 30% per decade increase.
Projected on 1950-1960 experience.
Projected on 1940-1960 experience.
Projected on 1920-1960 experience.
Projected on 1930-1960 experience.

Two methods of predictions are used in this study to determine future population, one based on past trends of numerical increase, the other on past trends of percentage increase. The numerical method is based on straight line extension of numerical growth during 1920-1960, 1930-1960, 1940-1960, and 1950-1960. The lowest predicted rate of growth results from the period 1930-1960, while the highest prediction is determined by the period 1950-1960. The second method, which produces much higher predictions than the numerical method, is based on the average percentage increase for each decade since 1920, which was 30%. In neither method was land availability a factor, for the Planners feel that adequate building land is available to accomodate population far beyond these prediction figures.

Future population predictions are as follows.

Year	Numerical Method*	Percentage Method
1970	15,450 - 16,500	17,500
1980	17,500 - 19,500	22,750
1990	19,600 - 22,450	29,600
2000	21,700 - 25,400	38,450

Figures rounded to nearest 50

*range from low to high

The planners feel that future population will be somewhere between the high of the numerical method and the percentage method, but probably closer to the percentage

method. If automobile transportation continues to improve, if retired people continue to make Cape Cod their home, if industrial research park development is successful and no major national economic catastrophe or war intercedes, the Planners see no reason why Barnstable should not continue to grow at a rate at least as fast as that experienced during the last ten years, for at least two or three decades into the future.

Chapter 7 School Study

Introduction

In 1961-1962, Barnstable operated eight public schools, six elementary, a junior high and a senior high. A new elementary school in Osterville, just completed, replaced the last of the aging elementary schools. Scheduled for construction is a new elementary school in Hyannis which could be completed in 1962.

The new senior high school was completed in 1957, and the old high school converted into a junior high school. The latter building has been undergoing modernization to bring it up to reasonable junior high school standards.

Elementary Schools

The six Barnstable elementary schools are located in six different villages. The Cotuit School serves Cotuit and Santuit; the Marston Mills School; Marston Mills, Newtown and Pondville, the Osterville School; Osterville, Wianno and Oyster Harbors, the Centerville School; Centerville and Craigville, the Barnstable-West Barnstable School; located in Barnstable Village, serves both those villages along with Cummaquid, and the Hyannis School serves Hyannis and Hyannisport.

Due to a lack of classrooms in the Hyannis Elementary School the fifth and sixth grades from Hyannis-Hyannisport use rooms in the junior high school. This is expected to continue until the completion of the elementary school in Hyannis.

The following table shows the name, capacity, and special facilities associated with each of the Barnstable elementary schools.

SCHOOL	ACREAGE	NUMBER OF CLASSROOMS	SPECIAL FACILITIES	PLAYGROUND FACILITIES
Cotuit	13.47	7 + kinder-garten (used by local kind. ass'n)	All-purpose room	Little League Baseball Field, Soccer Field, Playground Equipment
Marston Mills	13.11	6 + kinder-garten (kind. same as Cotuit)	All-purpose room	Same
Osterville	5	8 (no longer used)	Basement-auditorium	Same
New Osterville Elem.	36.2	12 + kinder.	Cafetorium Gymnasium	Basefield Field Soccer Field Playground Equipment
Barnstable -West Barnstable	32.32	12 + kinder. (kind. same as Cotuit)	Cafetorium Gymnasium	Same
Hyannis Elem.	18.	20	Cafeteria Gymnasium Auditorium	2 Basefield Fields 1 Soccer Field Playground Equipment
Centerville	13.3	6 + kinder. (kinder. used for 1st grade)	All-purpose room	Same (Baseball and Soccer Fields not town-owned)
New Hyannis Elem.		20 + 2 kinder.	Gymnasium Cafetorium	

Secondary Schools

Both Barnstable secondary schools are located in the Hyannis area and serve the whole town. The junior high, formerly the senior high school, is located near the village center. The new senior high school, completed in 1957, is located nearer to the geographic and population center of the town in the western part of Hyannis.

The following table shows the capacity and special facilities of both secondary schools.

School	Acreage	Number of Classrooms	Capacity	Special Facilities	Playground Facilities
Barnstable Junior High	22.5± (includes 7.5± acres of marsh-land)	28	700	Cafeteria Library Boys' Gym. Girls' Gym. Auditorium	Football Field Baseball " Softball " Tennis Courts (3)
Barnstable High	68.7±	26	800	3 Science Labs 1 Office Practice Room 1 Typewriting Room 1 Audio-Visual Room 1 Library 1 Study Hall 1 Pupil Activity Room 2 Household Arts Rooms 1 Art Room 1 Mechanical Drawing Room 1 Auditorium 1 Music Room 7 Shops 2 Cafeterias 1 Gymnasium (can be divided into 2)	3 Football Fields 1 Baseball " 1 Softball " 1 Soccer "

BARNSTABLE, MASS.

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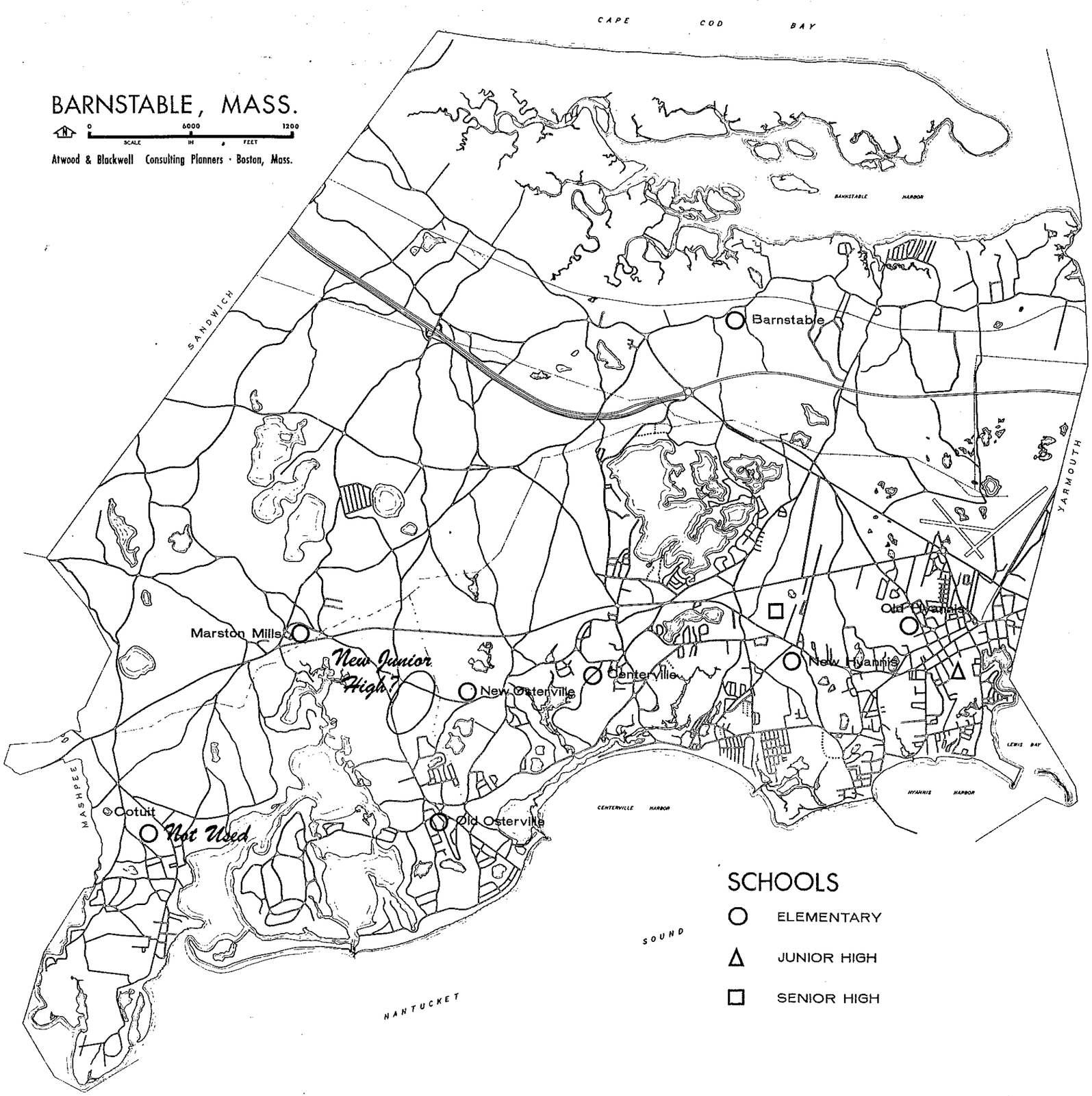
Atwood & Blackwell Consulting Planners · Boston, Mass.



SCHOOLS

- ○ ELEMENTARY
- △ JUNIOR HIGH
- □ SENIOR HIGH

Considering the recent and planned improvements in the junior high school, Barnstable secondary educational facilities are in good physical condition, have adequate playground and special facilities and are on adequate sites according to national standards.

Future School Enrollment

Prediction Methods

Future townwide school enrollment predictions have been computed in this report by the "survival method". This method is based on past experience in the school system and considers: 1) number of births in a given year and number of children entering first grade six years later; 2) number moving from grades 1 to 2 the following year and grades 2 to 3 the year after and so on through the 12th grade; 3) in-migration; 4) out-migration.

Survival Experience in the Period

Average survival experience between total town births and total first grade enrollment six years later during the years 1945-1960 was computed and applied to births between 1955-1960, to determine first grade enrollment through 1966. For grades one through twelve, survival was based on the average of students advancing from grade 1-2, 2-3, 3-4, etc., through the total school system. A separate survival index was applied for each grade advancement based on experience during the period 1945-1960. This has resulted in a townwide school prediction.

Townwide Enrollment Predictions

Total Barnstable public school enrollment has increased every year since 1945, with the exception of 1959 when a forty-eight pupil decrease occurred. Enrollment in 1960 totaled 2982, an increase of 1363 students since 1945. This figure excluded special students and post graduates. Based on total experiences during the period 1945-1960, Barnstable school enrollment in 1966 should be slightly over 3600, as shown by the following table. However, during the past five years the survival rate has decreased slightly in most of the grade groupings. Should the trend of the past five years continue, 1966 enrollment should be slightly under 3500. This raises the possibility of two prediction factors. By 1970, enrollment should be between 3900 and 4100, if present trends continue until that time.

Senior High School Enrollment in 1960

Senior high school enrollment in 1960 totaled 772, an increase of 324 since 1945. 1966 enrollment is expected to be between 975 and 1000; by 1970, it should be between 1060 and 1110; by 1974, it should be between 1115 and 1250, based on the high and low prediction factors. An addition to the high school will be necessary sometime around 1962, when between 860 and 890 students are expected to enroll. An addition for 400 students would allow for future growth and

TABLE I

BARNSTABLE PUBLIC SCHOOL ENROLLMENT

December 1945 - 1960

School Year	Births 6 years prior	Grades 1	2	3	4	5	6	7	8	9	10	11	12	Total
1945	162	189	139	171	115	146	116	140	155	132	130	91	95	1619
1946	155	180	161	144	163	127	141	123	136	169	124	111	91	1670
1947	163	183	168	163	145	173	120	143	132	138	140	107	100	1712
1948	195	227	173	164	150	147	164	127	143	135	125	134	88	1777
1949	212	238	213	175	172	162	153	173	126	136	131	123	105	1907
1950	161	228	231	216	174	181	167	158	174	125	129	126	111	2020
1951	173	188	232	236	213	184	183	173	164	165	123	134	94	2085
1952	200	247	178	223	213	209	187	186	183	146	154	109	115	2150
1953	286	312	227	172	213	207	212	185	170	175	140	136	100	2249
1954	261	277	309	232	167	226	211	219	174	182	176	119	132	2424
1955	239	247	275	299	216	178	215	226	206	174	159	152	118	2465
1956	236	273	252	295	307	219	178	225	225	195	166	135	134	2604
1957	334	336	285	260	270	275	207	173	217	240	184	144	121	2712
1958	304	310	309	262	252	254	293	213	171	244	227	139	114	2788
1959	265	265	274	295	254	236	237	286	215	202	207	165	104	2740
1960	271	303	275	289	299	255	246	255	288	233	207	188	144	2982
Survival Rate in Percentage		112	96	100	97	102	100	103	99	102	94	88	87	

TABLE II

PROJECTED ENROLLMENT, DECEMBER 1961 - 1974

Based on 15 Year Survival Rate

School Year	Births 6 Years Prior	Grades 1	2	3	4	5	6	7	8	9	10	11	12	Total
1960	271	303	275	289	299	255	246	255	288	233	207	188	144	2982
Survival Rate in Percentage		112	96	100	97	102	100	103	99	102	94	88	87	
1961	321	359	291	275	280	305	255	253	252	294	219	183	164	3130
1962	302	338	345	291	267	286	305	263	250	257	276	193	159	3230
1963	296	332	324	345	283	272	286	314	260	255	242	243	168	3324
1964	337	378	318	324	334	289	272	295	311	265	240	213	211	3450
1965	353	395	363	318	314	341	289	280	292	317	249	211	185	3554
1966	300*	336	379	363	308	321	341	298	277	298	298	219	183	3621
1967	320	358	322	379	352	314	321	352	295	283	280	262	191	3719
1968	370	414	344	322	368	359	314	330	349	301	266	246	224	3837
1969	390	437	398	344	312	375	359	323	327	356	273	234	214	3952
1970	410	460	409	398	334	318	375	370	320	333	334	240	203	4094
1971							318	386	366	326	313	294	209	
1972								328	382	374	306	277	255	
1973									325	390	351	270	241	
1974										332	366	309	235	

* estimated

TABLE III

PROJECTED ENROLLMENT, DECEMBER 1961 - 1974

Based on 5 Year Survival Rate

School Year	Births 6 Years Prior	Grades 1	2	3	4	5	6	7	8	9	10	11	12	Total
1960	271	303	275	289	299	255	246	255	288	233	207	188	144	2982
Survival Rate in Percentage		106	98	101	98	96	100	102	99	108	94	82	84	
1961	321	340	297	278	283	287	255	251	252	312	219	170	158	3102
1962	302	320	333	300	272	272	287	260	248	272	293	180	143	3180
1963	296	314	314	336	294	261	272	293	257	268	256	240	151	3256
1964	337	357	308	317	329	282	261	278	290	277	252	210	202	3363
1965	353	374	350	311	311	316	282	266	275	314	260	206	177	3442
1966	300*	318	366	354	305	298	316	286	263	297	295	213	173	3484
1967	320	339	312	370	347	293	298	322	283	284	279	242	179	3548
1968	370	392	332	315	362	333	293	304	318	306	267	229	203	3654
1969	390	414	384	336	309	348	333	299	301	343	288	219	192	3766
1970	410	435	406	388	329	297	348	340	296	325	322	236	184	3906
1971							297	355	337	320	305	264	198	
1972								303	351	364	301	250	222	
1973									300	378	342	247	210	
1974										324	304	280	208	

* estimated

should serve the needs of the town through 1974, provided future growth is similar to past experiences.

Junior High School Enrollment in 1960

Junior high school enrollment in 1960 totaled 543 students in grades 7 and 8, an increase of 248, or about 85%, since 1945. By 1966, enrollment is estimated between 550 and 575. By 1970, it should be between 635 and 690. The present junior high school can assume this growth with removal of fifth and sixth grade elementary pupils. By 1971, projections show that enrollment will be between 690 and 750, although 1972 shows a decrease to between 650 and 710. This means that additional space for 7th and 8th grades will be required early in the 1970's.

Elementary School Enrollment in 1960

Elementary school enrollment in 1960 totaled 1667, an increase of 791 -about 90% since 1945. By 1966, enrollment is expected to be between 1950 and 2050. Based on 25 pupils per classroom, between 78 and 82 classrooms will be needed. Based on 30 pupils per class, between 65 and 69 class rooms will be needed. Upon completion of the new Hyannis school there will be 83 classrooms available plus 7 kindergarten rooms. These figures do not include old Osterville school. This number of classrooms appears to be sufficient to house all elementary school pupils through 1966. By 1970, elementary

enrollment is estimated at between 2200 and 2300 requiring 86 to 90 rooms -based on 25 pupils per classroom- or 74 to 77 classrooms -based on 30 pupils per classroom. In either case, there are enough classrooms available to meet the needs, if kindergarten rooms are used.

Predictions of elementary school enrollment beyond 1966 is based on predicted births in Barnstable, based on past birth rates and trends. Over the past ten years, the number of births has fluctuated between 296 and 353 with two exceptions -1953 and 1954, when the number of births were lower. The trend in births in Barnstable has been eratic, as shown in Table I and forecasting the number of births is hazardous. The number of predicted births was determined in the following manner. The average number of births for four five year periods, 1940-1944, 1945-1949, 1950-1954, and 1955-1959 was established, as shown by the following table.

YEARS	BIRTHS	INCREASE OVER PRECEDING PERIOD
1940-1944	177	
1945-1949	231	54
1950-1954	282	51
1955-1959	323	41

The table shows that the average increase has dropped in each of the five year periods. The planners feel that this will continue under the existing growth patterns of Barnstable. From the 1960 Annual Report, it has been estimated that 300 births to Barnstable residents occured in 1960. This decrease is following national trends, but increases are expected by

1962. However, should massive home building occur again as it did in 1949 and 1950, these birth figures as well as the whole survival rate will tend to be on the low side.

Long range enrollment predictions of the individual elementary schools is even more hazardous. New housing development in a village could greatly change the enrollment of that village school without greatly altering overall enrollment. Under present growth patterns with known births, it is estimated that enrollment in each of the Barnstable elementary schools will be somewhat as listed below.

Marston Mills and Cotuit Schools

These six and seven room schools (each with a kindergarten) have sufficient capacity to meet their needs through 1966, and beyond. It is unlikely that the seventh room in the Cotuit school (not now in use) will be needed before 1966. It is estimated that in 1966 there will be about 27 pupils enrolled in the first grade at Marston Mills, and about 19 pupils in the Cotuit school.

Barnstable, West Barnstable School

This twelve room school with kindergarten appears sufficient in size to serve this area well beyond 1966. In 1966, it is estimated that 24 students will be in the first grade.

Osterville School

This new school scheduled for completion in 1961 will consist of twelve classrooms plus kindergarten. It appears to be of sufficient size to serve the area now served by the older Osterville school. By 1966, it is expected that eleven or twelve rooms will be in use. If the twelve rooms are in use, the largest class will be 24 students. First grade enrollment in 1966 is expected to be 33.

Centerville School

This six room school plus kindergarten will require an addition of between six and eight classrooms by 1966, unless pupils are transported to the new Hyannis elementary school. Enrollment growth in this school should be monitored closely, as additional classrooms are expected to be needed between 1965 and 1970. Centerville appears the fastest growing area in Barnstable. More homes have been built in Centerville in the last four years than in any other Barnstable village. Vacant land in Centerville and proximity to Hyannis should effect considerable new residential construction in coming years. By 1966, first grade enrollment is expected to be about 45.

Hyannis School

This twenty room elementary school is now being used to capacity by grades 1 - 4. Upon completion of the new school, 40 rooms will be available, which should be adequate to house all Hyannis elementary students through 1966 and beyond. In 1966, it is expected that about 190 students will be enrolled in the first grade. This will require between 7 and 8 classrooms for first grade use.

Enrollment Beyond 1970

Future enrollment in all Barnstable schools will be determined by future population. Population growth depends on factors such as land availability, access, zoning and economics. In Barnstable, the amount of buildable land is nearly 22,000 acres. Were this amount of land to be developed at half acre lots, almost 40,000 new homes could be built or over 100,000 people added to the existing population. The accompanying town map divides Barnstable into planning sectors. Land use for each sector is tabulated. The most important figure from the standpoint of school planning is "buildable lands". This indicates land which has no building, or swamp or steep slope conditions. By applying the buildable lands figure against present or future zoning an indication of future school classroom requirements can be obtained.

Assuming the 1960 population of Barnstable to be 13,465, as reported by the U.S. Census, slightly over 20% of the population was enrolled in Barnstable public schools in 1960 and over 12% enrolled in the elementary grades 1-6. Assuming that all buildable land in Barnstable was developed, resulting in a population of 125,000, school enrollment would be on the order of 25,000 pupils - more than 8 times present enrollment. In Cotuit-Santuit, comprised of sectors 4 and 5, about 2500 acres of buildable land remain. At present zoning standards,

over 3200 homes could be built resulting in a population increase of 10,000 in these sectors. This could mean an additional 120 elementary students, requiring five additional classrooms.

In the Barnstable - West Barnstable areas, sectors 1, 2, 10 and 11, over 6700 acres of buildable land remain. At present zoning standards, over 15,700 homes could be built resulting in over 50,000 additional people, or 600 additional elementary school pupils requiring 24 additional classrooms.

The possible population increases outlined above cannot be expected immediately, if at all. Public land acquisition will undoubtedly cut the amount of buildable land. Higher zoning standards can also cause less building within some sectors. However, the buildable lands figure provides a useful tool for gauging long range school needs in rapidly growing sectors of the community.

Until final zoning standards and land use patterns are determined and adopted, and a plan of land to be set aside for public and semi-public purposes is completed and acted upon, actual ultimate predictions are impossible.

Growth patterns and directions should continue along present trends, with Hyannis and Centerville growing most rapidly with slower growth in the western and northern parts of town. This pattern will continue until land scarcity in these two areas forces a change in the pattern.

TABLE IIIA

Barnstable Buildable Land Use Acreages

Sector	Buildable Land	
1	2221	
2	1564	
3	4767	
4	1320	
5	1200	
6	1373	
7	554	
8	1712	
9	1394	
10	1979	
11	981	
12	488	
13	612	
14	831	
15	141	
16	722	
	21859	Total

Conclusions and Recommendations

The public school grade groupings used in the United States are commonly 6-2-4; 6-3-3; and 8-4. Estimated Barnstable enrollments based on these grade grouping alternatives are shown in Table IV. The present Barnstable grouping is 6-2-4; that is grades 1-6 in the elementary schools, grades 7 and 8 in the junior high and grades 9-12 in the senior high. Existing capacity of the high school is 800, the junior high 700, and the elementary schools (not including kindergarten) about 1475. The latter figure is based on 25 pupils per classroom. With the completion of the new 20 room Hyannis elementary school, total Barnstable elementary school capacity will be 2075 or 83 classrooms. In addition 7 kindergarten rooms could be used for elementary classrooms as the Centerville kindergarten room is now used.

Under present grade grouping, including new elementary school classrooms under construction or to be constructed, the planners estimate that Barnstable elementary school capacity is sufficient through 1970 if growth trends remain similar to those experienced during the past five to fifteen years. Should large scale in-migration of young married people occur before 1970, then the enrollment projections would tend to be on the low side. Similarly a slowing of construction, drastic decrease in birth rates or substantial out-migration would cause elementary capacity to be adequate for a longer time span.

The capacity of the Junior High appears adequate through 1970, but additional room will be needed sometime in the early 70s if present trends continue.

The Senior High is now reaching capacity and by 1962-63 will have exceeded it. Under present grade grouping an addition is needed immediately. The school was designed to accommodate a 400 capacity addition. Even with the 400 pupil addition, it is estimated that by 1973 the high school will have reached its ultimate designed capacity of 1200.

Solutions Under Present Grade Groupings

The only enrollment problem foreseen between now and 1970 is in the high school. After 1970 additional classrooms appear to be needed in both junior and senior high schools. Unless classes are enlarged or kindergarten rooms used or the old Osterville school used, additional elementary rooms also appear to be required.

Two solutions to the high school capacity problem appear available. The town could build the 400 capacity addition now and have surplus space available for a period or a 200 capacity addition could be built now which appears adequate through 1967 and another 200 capacity addition completed by 1969 when it is estimated that enrollment will be over 1050 students.

Alternative Solutions

Stated briefly below are alternative grade grouping solutions which change capacity requirements considerably.

Under a 6-3-3 grouping no additional elementary school needs should occur before 1970. The Junior High capacity would have been exceeded in 1960 and by 1970 there will be approximately 1000 students in grades 7 through 9. This will require construction of either another junior high school or an addition to the present junior high. On the other hand, there will be a significant change in High School enrollment permitting the present high school to serve needs through the early 1970s without additions.

Using an 8-4 grade grouping, the problem of the High School is the same as under the present grade grouping. The Junior High would be eliminated and the present Junior High with 28 classrooms would be used as another elementary school. Each elementary school would have to house grades 1-8. This would require additions to the Cotuit, Marston Mills and Centerville Schools. If the existing kindergarten rooms in these three schools were used, the only addition appearing necessary would be one room at Marston Mills and one room at Centerville. If it were decided not to use kindergarten rooms, the latter two schools would require two room additions and the Cotuit School would need a one room addition. Based on one room additions at two schools and conversion of the junior high to an elementary school, a total of 113 elementary class rooms would be available. In addition the old 8 room Osterville school and 4 kindergarten rooms would be available. At twenty-five pupils per classroom,

2825 students could be accommodated in the 113 rooms which would be sufficient through 1969. If the grade size were increased to 28 pupils these 113 rooms could house 3164 pupils or more than estimated 1970 enrollment.

TABLE IV

Barnstable Public School Enrollment
1945 - 1974

Year	Grade Groupings						
	1 - 6	1 - 8	7 - 8	7 - 9	9 -12	10-12	1 - 12
1945	876	1171	295	427	448	316	1619
1950	1197	1529	332	457	491	366	2020
1955	1430	1862	432	606	603	429	2465
1960	1667	2209	543	776	772	539	2982
*1961	1752	2256	504	807	860	557	
1962	1808	2312	510	774	886	622	
1963	1816	2378	562	824	912	650	
1964	1884	2471	587	858	935	664	
1965	1932	2488	556	872	960	644	
1966	2002	2564	562	860	988	690	
1967	2008	2634	626	910	1000	716	
1968	2074	2724	650	954	1021	717	
1969	2174	2799	625	975	1060	710	
1970	2248	2911	664	995	1088	757	
1971			722	1045	1120	797	
1972			682	1051	1174	805	
1973					1214	830	
1974					1179	851	

* Estimated Enrollments for 1961 - 1974 are based on the average enrollments predicted in Tables II and III.

Recommendations

The planners feel that the 6-2-4 grade grouping presently used by Barnstable or the 6-3-3 grouping used in some other communities, both have advantages for Barnstable., Such questions as optimum size of high school and the intellectual and social import of various age group admixtures must be determined by the town itself. We tend to favor eventual 6-3-3 grouping for the community mainly because it would keep high school enrollment to a manageable size while permitting development of two junior high schools, geographically separated, to serve the needs of the east and west portions of the community. The 8-4 system would represent a retrogressive step for the community, we believe, because in at least three Barnstable schools there would be only one seventh and one eighth grade class.

Under the 6-2-4 system an immediate addition to the high school appears necessary and in the early 1970s another addition will be needed, as will an addition to the junior high school. There is adequate area at the present junior high site for enlargement to double its present capacity. However, if this grade grouping is continued, thought should be given to construction of a new junior high in the western part of Barnstable. The planners recommend obtaining some 25 acres in the Osterville area as shown on the plan map to provide a site for this second junior high to serve the western part of town. Enough land is available at the high school for continued

expansion although special facilities such as gymnasiums and cafeterias would have to be enlarged or additional ones built to serve the school when enrollment exceeds 1200.

If the 6-3-3 grouping were to be adopted by Barnstable the planners recommend immediate 200-capacity addition to the high school. This should be adequate to meet the classroom need of grades 10-12 through the 1970s. If, in the 1967-8 school year a new 600 pupil junior high school was built in the western part of Barnstable, the conversion to the 6-3-3 taking place in September of 1968, this should take care of all secondary classroom needs through the 1970s.

All Barnstable township elementary school sites are large enough to permit building expansion. As such, for the next 20 years, it appears possible to meet all new elementary school needs through enlargement of the smaller village schools to some 20 classrooms. This prediction could change if unforeseen growth should suddenly cause major Barnstable population increase.