

CONTROL OF EXPANSION AND DEVELOPMENT  
IN THE PROVIDENCE, RHODE ISLAND,  
METROPOLITAN AREA

by

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Submitted in Partial Fulfillment  
Of the Requirements for the Degree of  
Master of City Planning  
at the  
Massachusetts Institute of Technology

1951

Signature

Dept. of City and Regional  
Planning  
May 19, 1951

CONTROL OF ~~EXPANSION~~ EXPANSION AND DEVELOPMENT IN THE PROVIDENCE,  
RHODE ISLAND, METROPOLITAN AREA.

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Submitted for the degree of Master of City Planning in the  
Department of City and Regional Planning on May 19, 1951.

Control of expansion and development in the Providence, Rhode Island, metropolitan area is considered necessary in order to stabilize the economic structure of each municipality, to maintain the social value of community life and to preserve the amenities of the countryside.

A sketch plan for the metropolitan area, based on a forecast of population for the year 1970 and on basic planning data, has been made which incorporates the principles of self-contained commuter and satellite communities, varying in size and connected with each other and with places of employment, recreation and culture by a radial and belt system of limited-access highways and parkways. Detailed plans for two selected towns in the area bring out the problems for which control measures are necessary.

These problems are, principally, - 1) the excessive costs to municipalities resulting from dispersed settlement, 2) the inefficient and, frequently, undesirable pattern of land use which results from such dispersion, and 3) the lack of coordination between plans and policies of municipalities resulting from independent jurisdiction of control.

The control measures recommended are state, metropolitan and local in scale. They include provisions for state and local planning, a form of metropolitan government for certain metropolitan functions, the police power regulations of zoning, subdivision control and building codes, a program for equalization of revenues to municipalities, and revision of state laws concerning foreclosure proceedings and forestry holdings.

LETTER OF TRANSMITTAL

Cambridge, Massachusetts  
May 19, 1951

Prof. Frederick J. Adams, Head  
Dept. of City and Regional Planning  
School of Architecture  
Massachusetts Institute of Technology  
Cambridge 39, Massachusetts

Dear Professor Adams:

In partial fulfillment of the requirements for the degree of Master of City Planning, I herewith respectfully submit my thesis, entitled "Control of Expansion and Development in the Providence, Rhode Island, Metropolitan Area".

Sincerely yours,

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Marion E. Ford

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## INTRODUCTION

### Growth of Metropolitan Areas

The increasing urbanization of our nation's population has within the past few decades concentrated within the metropolitan districts of the country. Many of the central cities, particularly the older ones, have reached a near-peak or are declining in population, while the surrounding metropolitan areas are expanding rapidly.

This expansion of urbanization has been in terms of area as well as population. Because of the improvements in means of transportation, the necessity for living in relatively compact population aggregates in order to be close to places of employment has substantially diminished. The result of this expansion can be observed in the string developments along major traffic routes, the clusters of dwellings at former inter-urban railway stops, and, more recently, the development of new plats that may be far removed from existing population centers. Other results that are not so easily observed are the mis-use of land, the inflation of land values, the increasing tax burden on peripheral communities which are faced with the problem of servicing units in a thin pattern of residence without receiving adequate tax compensation from them, and the loss in community identity which results from such a pattern.

### Need for Control Measures

The necessity for guiding growth and development in the peripheral fringe areas of our cities is fully as great as that

within the cities themselves. The parasitic expansion of town into country needs to be controlled if the economic structure of each municipality is to be stabilized, if the social value of community life is to be maintained, and if the amenities of the country are to be preserved.

### Study of the Providence Metropolitan Area

In order to investigate the type of controls needed at both the state and local level for accomplishing these objectives, the metropolitan area of Providence, Rhode Island, was selected for study. Some of the problems found and solutions suggested are applicable only to this area, but others may apply to any metropolitan area.

For statistical purposes, the 1950 census definition of the portion of the metropolitan district within the State of Rhode Island was adopted. This includes the nineteen cities and towns listed below. For planning purposes, this boundary line was not adhered to strictly, as it was felt that certain suggested solutions inherently metropolitan in character went beyond the artificial town line boundaries of the official metropolitan district.

Throughout this paper, the term "metropolitan area" has been used to distinguish that portion of the metropolitan district which is outside of the central cities. (See below).

### The Metropolitan District

Central cities - Providence, Pawtucket, Central Falls

Metropolitan Area - Barrington, Warren, Bristol, East Providence, Cumberland, Lincoln, Woonsocket, North Providence, North Smithfield, Smithfield, Johnston, Cranston, Warwick, West Warwick, East Greenwich, and North Kingstown.

## METHOD OF PROCEDURE

Before determining what measures were necessary or desirable for controlling the metropolitan expansion and development in the Providence area, it was first necessary to determine what that expansion was going to be (in terms of both population growth and area requirements) and where it should be located.

An estimate of the 1970 population was made, therefore, and this potential growth was allocated among the cities and towns of the district according to the method explained in the Appendix.

This prediction, plus basic data on land use, main lines of transportation, and topography, formed the basis for developing a policy program on expansion and development in the metropolitan area. This program was then portrayed in the form of a schematic sketch plan for the area.

In order to illustrate more fully how individual towns would fit into this pattern and to bring out their special problems, two towns of different character were selected for more detailed study. Here again, sketch plans developed for each of these towns indicate the similarities and differences in solutions for each of them.

From these basic sketch plans, it was possible to develop a program of control measures, which, it is felt, could aid in the effectuation of the policies set forth.



## CHARACTERISTICS OF THE METROPOLITAN DISTRICT

The District as a Whole

Population and Topography - Rhode Island, the smallest state in the Union, is also the most highly industrialized and has the highest average population density. Over two-thirds of this industrial concentration and 85% of the total state population are within the metropolitan district. But in spite of these facts, less than one-fifth of the total metropolitan area outside of the central cities of Providence, Pawtucket and Central Falls is utilized for purposes other than farming or forestry. (See Table I).

Because of the topography, the greater part of the urban growth has occurred along the river valleys and the low-lying plains that bound the Narragansett Bay. Growth has been primarily to the South, in the direction of least topographic resistance. (See Land Use and Topography Maps).

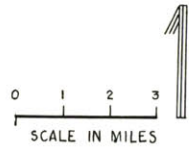
Economy - The economy of the area is based primarily on manufacturing, particularly in the textile, machine tool and jewelry industries. The relative importance of each of these industries for each city and town in the district may be seen from the Basic Employment Map. The shift from a commercial and shipping center to a manufacturing center began in the early 1800s when the first textile mill in Rhode Island was located on the Blackstone River in Pawtucket. The existence of adequate water supply in the form of many rivers and streams plus a






METROPOLITAN DISTRICT  
PROVIDENCE, RHODE ISLAND

# LAND USE

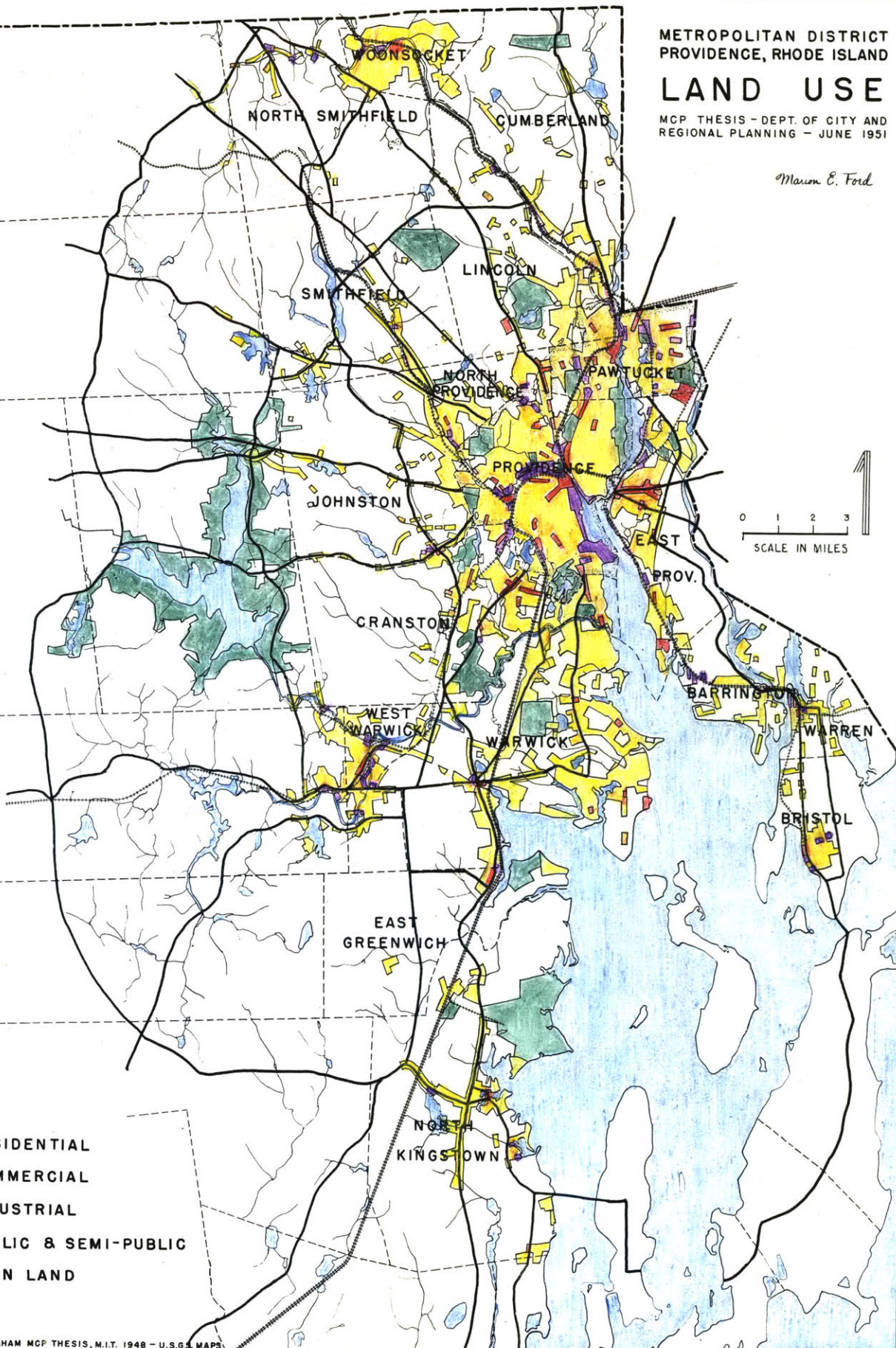
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*Maurice E. Ford*



-  RESIDENTIAL
-  COMMERCIAL
-  INDUSTRIAL
-  PUBLIC & SEMI-PUBLIC
-  OPEN LAND

SOURCE: DONALD GRAHAM MCP THESIS, M.I.T. 1948 - U.S.G.S. MAPS



METROPOLITAN DISTRICT  
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**TOPOGRAPHY**

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*Maxim E. Ford*

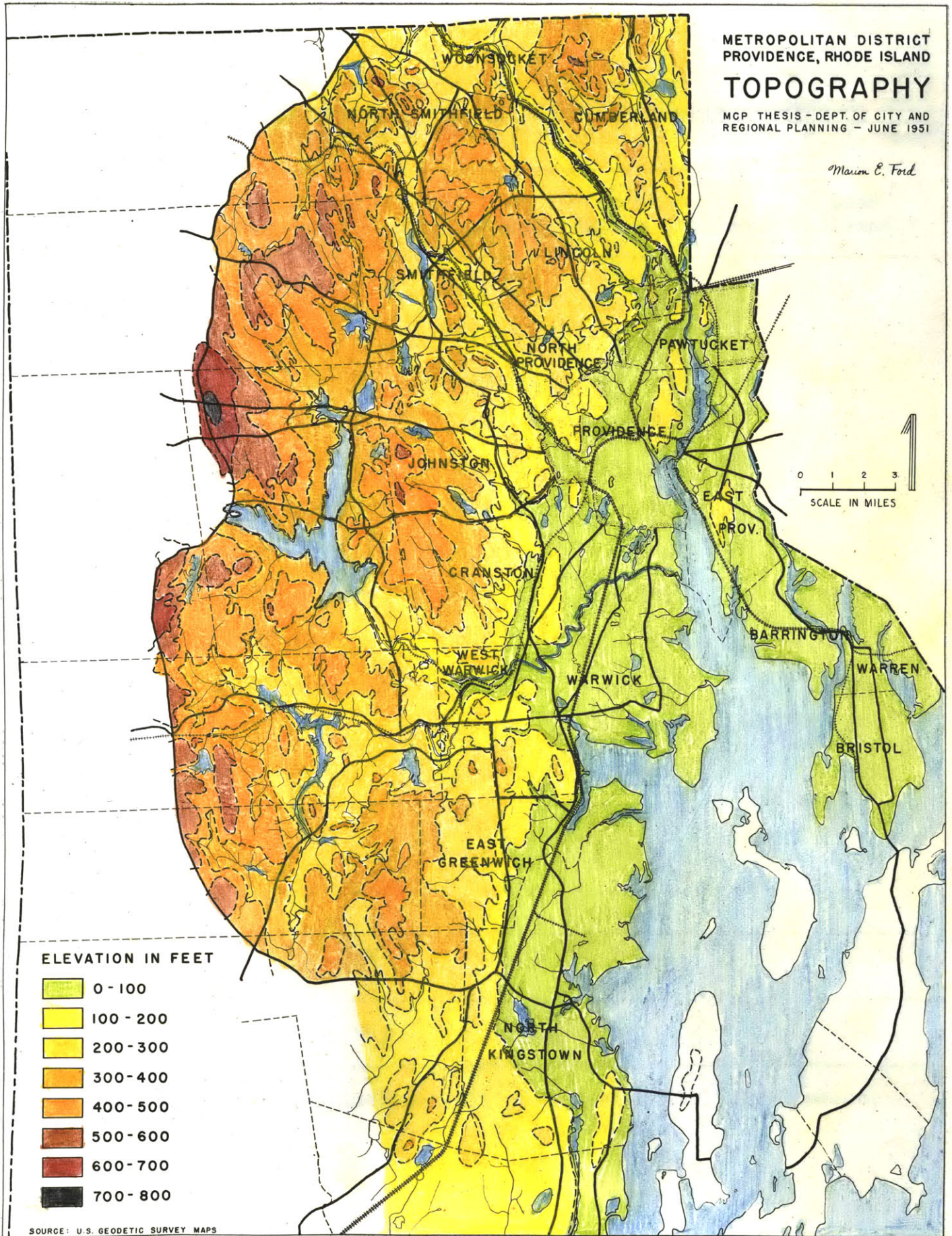


TABLE I: LAND UTILIZED FOR PURPOSES OTHER THAN FARMING OR FORESTRY IN METROPOLITAN AREA, PROVIDENCE, R. I.

Towns and Cities of Metropolitan Area	Total Area (sq. miles)	Total Square Miles Utilized	% Land Utilized *
Cranston	28.7	7.9	28
Johnston	25.7	4.2	16
Lincoln	19.6	3.5	18
Cumberland	27.0	2.7	10
Smithfield	27.1	3.3	12
North Smithfield	24.9	1.4	6
East Greenwich	16.0	.5	3
Warwick	52.3	13.2	25
West Warwick	6.5	3.1	48
North Kingstown	58.0	7.0	12
Woonsocket	8.6	3.6	42
Barrington	15.4	2.0	13
Warren	10.3	1.2	12
Bristol	9.7	1.2	12
East Providence	13.0	5.7	41
<b>TOTAL</b>	<b>343.7</b>	<b>60.5</b>	<b>18</b>

Source: Land Use Map

\* This does not include scattered residential development.

relatively humid climate favorable to the processes involved in textile manufacturing were both predominant factors in influencing the rapid growth of the textile industry in the state. This growth was reflected in the development of many industrial communities along the river valleys, a pattern which is still predominant.

The present trend for the textile industry to move to the South is causing this industry to occupy a less important position than formerly in the economy of the area. However, the continued growth in number of plants established and number of persons employed in the district, even since World War II, indicates that the economy of the area is relatively stable, if not expanding at as great a rate as the rest of the country. (Table II).

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TABLE II: EMPLOYED MANUFACTURING LABOR FORCE AND NUMBER OF MANUFACTURING PLANTS IN THE PROVIDENCE, RHODE ISLAND, METROPOLITAN DISTRICT - 1940-1950 DECADE.

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	1940	1946	Increase over 1940	1950	Increase over 1946	Increase 1940 - 1950
Labor Force Employed in Mfg.	164,982	202,104	22%	207,715	3%	26%
Number of Mfg. Plants	2,564	3,198	25%	3,361	6%	31%

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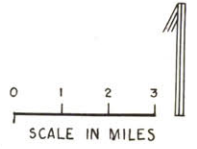
Source: 1950 Annual Report, R. I. State Department of Labor

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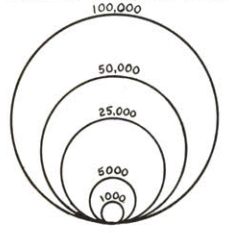
**METROPOLITAN DISTRICT  
PROVIDENCE, RHODE ISLAND  
BASIC EMPLOYMENT**

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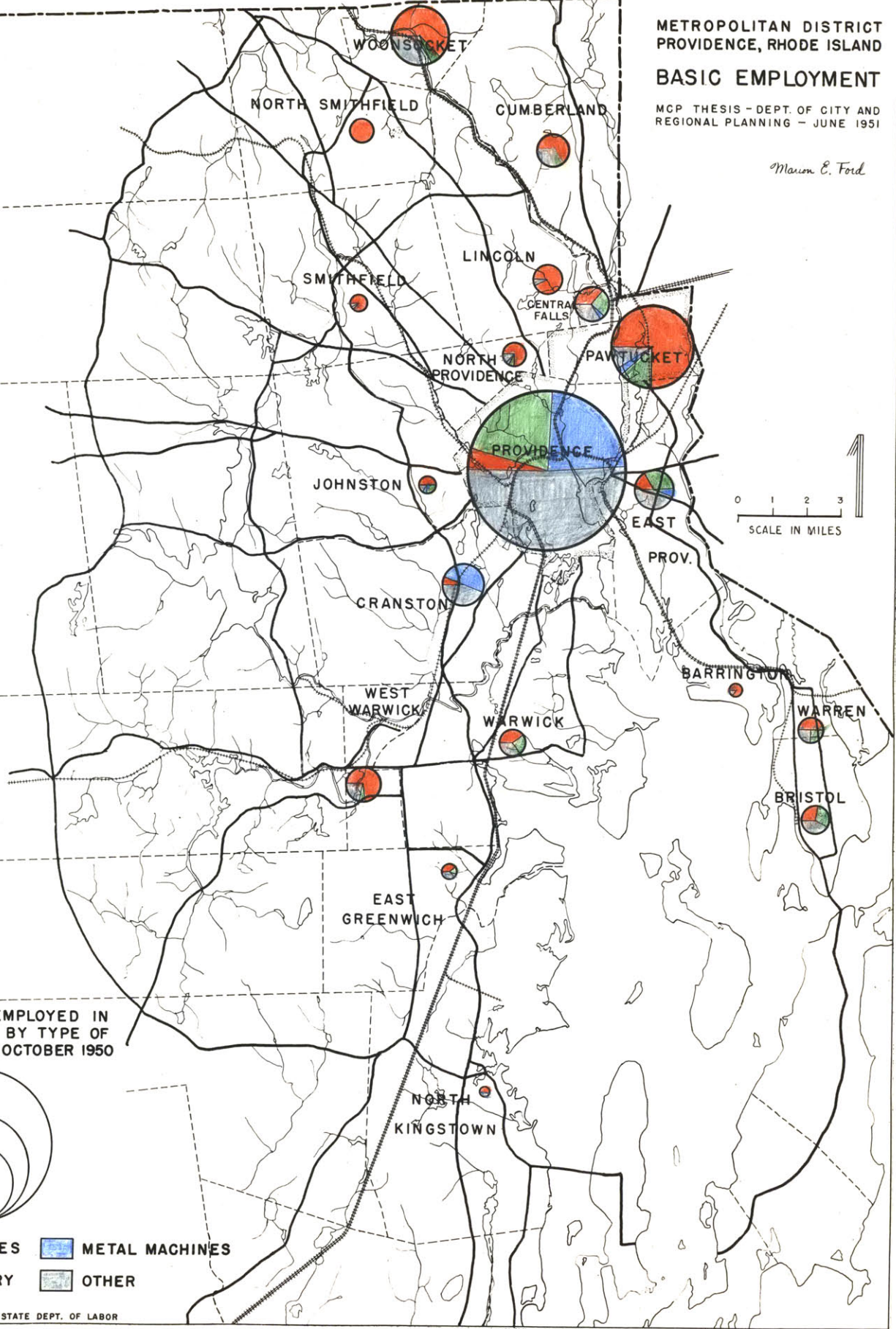


**PERSONS EMPLOYED IN  
INDUSTRY, BY TYPE OF  
INDUSTRY, OCTOBER 1950**



- TEXTILES
- METAL MACHINES
- JEWELRY
- OTHER

SOURCE: RHODE ISLAND STATE DEPT. OF LABOR



Transportation - The metropolitan district is served by water, air, rail and highway transportation lines. The waters of the Narragansett Bay formerly made Providence an important shipping center, but the growth of industry and other methods of transportation has caused this particular phase of the city's life to become of minor importance.

The state-owned airport at Hillsgrove (South of Providence) serves both passenger and air freight traffic. A site has recently been acquired by the State for the development of another Class II airport in Smithfield which will serve the Pawtucket-Woonsocket-Attleboro region.

The main line of the New York, New Haven and Hartford Railroad, with all passenger trains stopping at Providence, provides the district with direct access to New York and Boston. The New Haven Railroad also operates a passenger and freight line through Woonsocket to Worcester as well as freight lines only to Bristol, Pascoag and Willimantic, Connecticut. The latter line serves Cranston and West Warwick.

The skeleton of a radial and belt line highway system already exists in the metropolitan district, but the lack of adequate right-of-way and control along the system is detrimental to its efficient operation. This is particularly true in the central cities where the traffic problem is a serious impediment to both through and local traffic.

Recreation - Within the metropolitan district, the State owns and operates several reservations and state parks. Diamond Hill Reservation in Cumberland is principally attractive for winter sports because of the existence there of the only ski tows in the state. Lincoln Woods is particularly popular for swimming and offers also facilities for hiking, horseback riding and picnicking. The Peter Randall Reservation, however, gets little use because of its small size, relative inaccessibility and undeveloped nature. Just West of Providence, the Neutaconkanut Hill Reservation offers some attraction for winter sports (a toboggan slide is a feature) and developed playfield areas for general use. The Goddard State Park is the only large public area for recreational use towards the South. Located on the Bay, it has provision for salt water swimming (when the pollution conditions in the Bay are not too severe) as well as for golf, baseball, picnicking and general relaxation.

The heavy use that all these areas receive indicates the need for their expansion and the development of new areas to meet the recreational needs of the metropolitan population.

Government - In the cities of the district, the form of government is that of an elected mayor and council. Most of the towns are governed by an elected town council with annual financial town meetings. Some of the smaller towns have the familiar New England town meeting form of government where the people have a direct vote on all issues.



As in the other New England states, the incorporated area of the town or city is equivalent to the total area so that the county has a very minor governmental function. This abutment of jurisdiction of the municipalities leads to problems at their boundary lines which may be due to the poor physical location of the lines or to differences in laws and policies. The tendency for each municipality to jealously guard its individual rights further complicates any inter-town issue.

### The Central Cities

Providence, the state capital and the jewelry manufacturing center of the nation, also serves as the commercial, cultural and institutional center for the metropolitan district. Located centrally at the head of the Narragansett Bay, it offers a compact central business district easily reached by transit from all urbanized parts of the metropolitan area. An old city, it has many places that are of historical interest. Brown University and the Rhode Island School of Design offer educational opportunities to students the world over.

Pawtucket, a city of approximately 81,000, just North of Providence, is one whose growth was largely due to the development of the textile industry. Self-contained, it has its own central shopping center, newspaper and political life and operates quite independently of Providence.

Central Falls has been considered a central city in spite of its small size (1.2 square miles) and population (approximately 24,000) because of its close physical connection and similarity in character to the adjacent residential areas of Pawtucket. Because of its high population density (higher than either Providence or Pawtucket), its problems are more akin to those of the central urban area than to those of the peripheral metropolitan area.

### The Metropolitan Area

The urban pattern outside of the central cities is composed predominantly of the following two types - the relatively compact and satellitic type of community where many of the workers are still dependent on the job opportunities near at hand, and the low density residential commuter development made up very largely of that part of the population which is seeking a more pleasant environment and more space than the city can offer at the expense of travel time and fewer public services. Actually, many communities are composed of a mixture of both of these patterns, but usually one form is predominant.

Those municipalities that fall principally into the first category are Bristol, Warren, East Providence, West Warwick, North Kingstown and Woonsocket. In a number of towns, like Lincoln, Cumberland, Smithfield and North Providence, the villages along the river valleys and rail lines are of a satellite character because of their growth and development around local industries. The village of Apponaug, in the city of Warwick, is another example of this type of development. The residential development in the remainder of these towns, however, is made up largely of a commuter population, as is the residential development of the towns of Barrington, North Smithfield, Johnston and East Greenwich as well as the city of Warwick.

The city of Cranston must be considered separately. The high density Eastern part of the city conforms more directly to the central cities in character, while the central section has a high proportion of new suburban development, and the Western half is still devoted largely to farming.

## A PLAN FOR THE METROPOLITAN AREA

Expected Growth (See Appendix for details)

The population for the metropolitan district in 1970 is estimated as being in the vicinity of 725,000 persons or an increase of 9% (60,000 persons) over the 1950 population. Since a decrease of 13,000 persons is planned for the central cities during this period, the net increase of population in the outer metropolitan area will be approximately 73,000. Assuming an average gross density of 3 families per acre and an average family size of 3.3, the area required to accommodate this increase will be 11.4 square miles which is only 5% of the total land area that is presently available for development. (See Table I). Much of this land is, of course, either undesirable or unsuitable, by reason of topographic or drainage conditions, for building, but the figure still indicates clearly the need for channelizing this expected growth into economically feasible units and for controlling the use of the remaining open land.

## Objectives

The development of the sketch plan for the metropolitan area has been based on the following objectives:

- 1). The limitation of the size of residential communities so that the walking distance to the elementary school and community center is not excessive ( $1/2$  to  $3/4$  mile) and so that a feeling of physical cohesion in the community is maintained.
- 2). The balance between development of these communities at a high enough population density to economically maintain an elementary school and utilities, and the desire of people in a suburban area to have more open space about them. (This density was set at an average of 3 families per gross acre which means that a circular area with a  $1/2$  mile radius would support a maximum of 1500 families or about 5000 persons. Three families per gross acre is roughly equivalent to 10,000 square feet of lot area per family).
- 3). The location of these residential communities to correspond as closely as possible with existing residential groupings, except where these latter no longer contribute to a reasonable pattern of land development.
- 4). The preservation of community identity, both physical and social, through:
  - a. the development of town centers with which the town could identify itself (these need not be large in scale)
  - b. the maintenance of green-belt open space, wherever practicable, between communities
- 5). The development and improvement of transportation lines in order:
  - a. to provide easy access to the central cities and places of employment for people in the metropolitan area
  - b. to provide easy access for the residents of the entire metropolitan district to places of recreation
  - c. to provide easy access between communities in the metropolitan area
  - d. to provide efficient communication and interchange lines for the preservation and development of the economy in the area
- 6). The preservation of open space for recreational, agricultural and forestry uses.
- 7). The provision of opportunity for commercial and industrial development.

### Proposed Plan

These objectives are portrayed visually in the Sketch Plan for the metropolitan area which shows, schematically, a distribution pattern of the principal types of urban structure in the area. The extent of additional urbanization that is expected due to the growth of residential development alone can be seen from Table III. The extent of new area needed for industrial development is not expected to be significant, as there is still room for certain types of industrial development in the city of Providence, and the predicted population increase in the district (60,000 persons) will add only approximately 14,000 persons to the labor force, at least half of which will be consumed in secondary rather than primary occupations. Without an economic base analysis, the exact extent of industrial decentralization could not be estimated accurately, and so such areas were not shown on the Sketch Plan. It can be said, however, that the availability of suitable land along the New Haven Railroad South of Providence and the development of the new North-Central airport in Smithfield are factors which would probably tend to draw any major industrial development to those two sectors of the area.

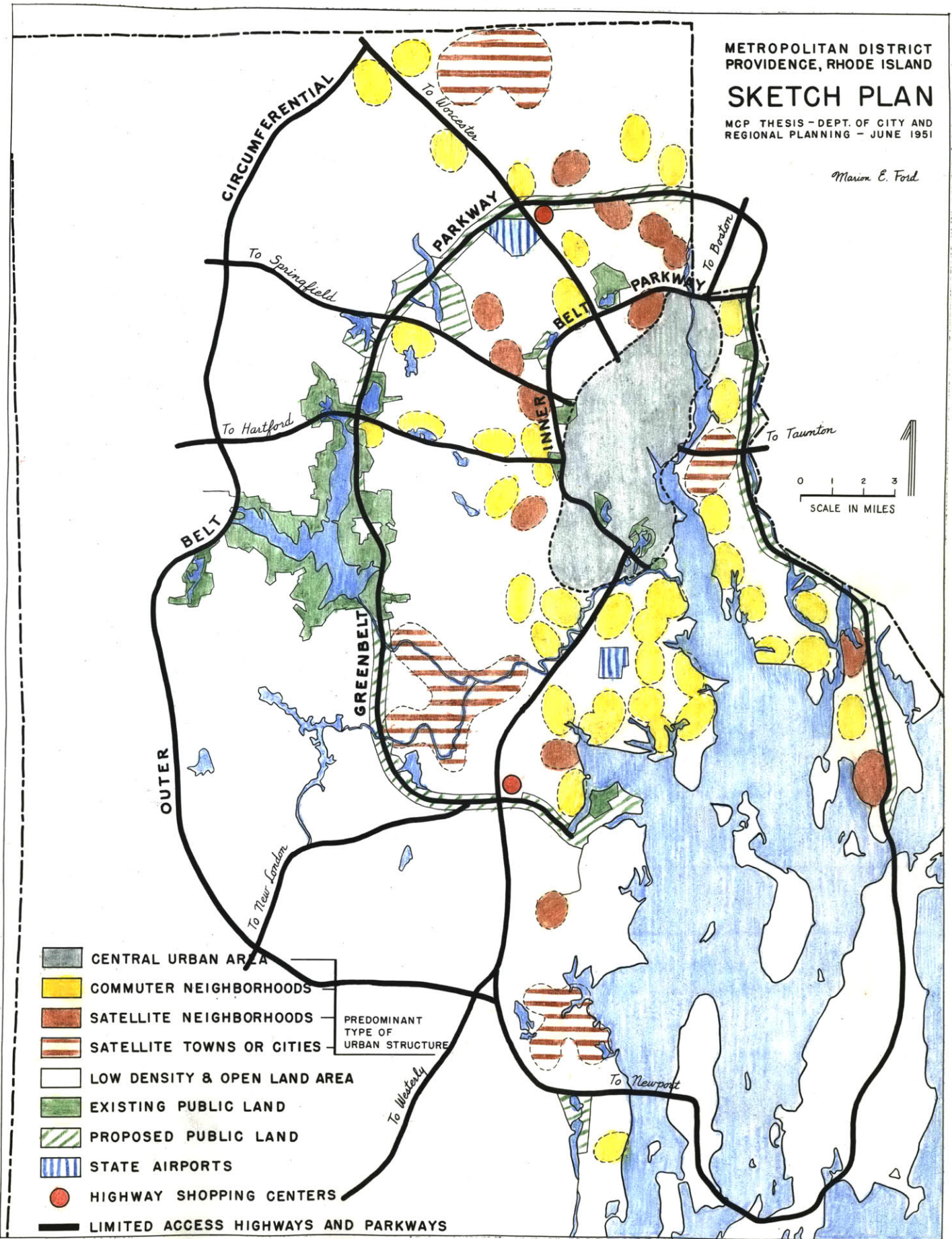
Possible locations for decentralized shopping centers, a type of development which is becoming increasingly popular and which is, apparently, economically feasible, have been indicated on the plan.

METROPOLITAN DISTRICT  
PROVIDENCE, RHODE ISLAND

SKETCH PLAN

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





- |   |                                      |   |
|---|--------------------------------------|---|
|  | CENTRAL URBAN AREA                   | PREDOMINANT<br>TYPE OF<br>URBAN STRUCTURE |
|  | COMMUTER NEIGHBORHOODS               |   |
|  | SATELLITE NEIGHBORHOODS              |   |
|  | SATELLITE TOWNS OR CITIES            |   |
|  | LOW DENSITY & OPEN LAND AREA         |   |
|  | EXISTING PUBLIC LAND                 |   |
|  | PROPOSED PUBLIC LAND                 |   |
|  | STATE AIRPORTS                       |   |
|  | HIGHWAY SHOPPING CENTERS             |   |
|  | LIMITED ACCESS HIGHWAYS AND PARKWAYS |   |

TABLE III: ADDITIONAL URBANIZATION EXPECTED IN METROPOLITAN AREA BY 1970 DUE TO GROWTH OF RESIDENTIAL DEVELOPMENT.

Municipality	Expected Population Increase	Additional Area Required (sq. Miles)	Total Urbanized Area (sq. miles)	% Land Utilized
Cranston	10,000	1.6	9.5	33
Johnston	8,500	1.3	5.5	21
Lincoln	4,100	.6	4.1	21
Cumberland	2,800	.5	3.2	12
Smithfield	6,600	1.1	4.4	16
North Smithfield	3,100	.5	1.9	8
East Greenwich	1,500	.2	.7	4
Warwick and West Warwick	16,100	2.6	18.9	32
North Kingstown	10,200	1.6	8.6	15
Woonsocket	7,500	1.2	4.8	56
Barrington	3,700	.6	2.6	17
Warren	300	.1	1.3	13
Bristol	900	.2	1.4	14
East Providence	-3,600	none	5.7	41
TOTAL		10.5	71.0	21

Note: The additional area required is based on a density of 3 families per acre and an average family size of 3.3.



The proposed highway system consists basically of limited-access express radial highways, which would serve through traffic and provide quick access to and from the central cities, and belt parkways (also limited-access) to connect the major recreational areas and to form greenbelt rings separating various parts of the metropolitan district. The inner belt parkway would insulate the principal central urban area from the outer metropolitan area, and the greenbelt parkway would act as a buffer between the metropolitan area and the rest of the state. The outer belt circumferential, now existing as a non-limited access state highway, would serve as an outer bypass route to the metropolitan district and would connect a number of the Western towns in the state. Many detailed improvements in non-limited access highways connecting town and community centers would also be necessary for efficient development of the area as a whole.

More detailed application of the principal features of this plan are indicated in the following pages where two towns in different sectors of the metropolitan area have been selected for further study.

## THE TOWNS OF JOHNSTON AND NORTH KINGSTOWN

Reasons for Selection

The towns of Johnston and North Kingstown were selected for more detailed consideration for two reasons. Firstly, they represent the sectors within the metropolitan area of greatest potential growth, and, therefore, ones in which control measures are of importance. Secondly, since Johnston is predominantly a residential commuter town and North Kingstown a satellite community, together they present the opportunity to show in what respects the development problems of these two types of community are similar and in what respects they differ.

## The Town of Johnston

### Characteristics and Problems

The town of Johnston's 1950 population of 12,735 persons is primarily distributed along the periphery of Providence and Cranston where the availability of water from extensions of Providence water mains, the close proximity to transit lines and the open, high land suitable for residential development offer the greatest attraction to the home-builder. The homes in this area are generally attractive and well kept-up, although vacant lots in certain portions evidence deficiencies in the original subdivision layout. Johnston is predominantly a residential suburb of Providence, since it has little basic employment of its own. Over half of its labor force in 1940 was classified as being engaged in manufacturing occupations which indicates the high dependence of this force on jobs outside of the town.

Other development in the town is scattered in small village groupings around existing or former industries or is spread along the major traffic routes. Route 6, which is the major route between Providence and Hartford, Connecticut, is particularly characteristic for its spotty mixed use which occurs in the one and a quarter mile length strip of over-optimistic zoning for commercial use.

Although Johnston does have a town hall located at the junction of Routes 5 and 6 in the approximate geographical center of the town, there is no real town center as such. The lack of a high school in the town contributes to the loss of

social contact that recreational and social programs in such an institution can frequently provide for adults as well as young people.

At present, the majority of Johnston's high school pupils attend the Providence high schools, and the town pays tuition charges to Providence for them. There are twelve schools in the town at the present time (three through the junior high level), but their distribution and that of the population is such that school bus service is still necessary for many pupils. The financing of the school program is a major problem in Johnston, and it presently consumes 70% of the tax dollar, leaving little for other public services.

Assessments in the town are low, particularly because they have not been revised since before the war. There is need for a re-evaluation of properties in the town in order to bring assessments up-to-date and provide the town with the additional revenue it needs, but the local assessors lack the proper knowledge for such a job and the town is unable to afford outside aid.

Much of the land in Johnston is unsuitable for building because of either topographic or drainage conditions, but much more would be desirable for residential development if utilities and bus service were available. At present, only about one-tenth of Johnston's land area is served by utilities. The building of the Olneyville Expressway in Providence, which will remove a major traffic bottleneck for access to the center of the city, should materially aid in increasing the desirability of Johnston as a place to live.

### Solutions and Opportunities














The attempt, then, in the development of the general sketch plan for the town has been to do the following things:

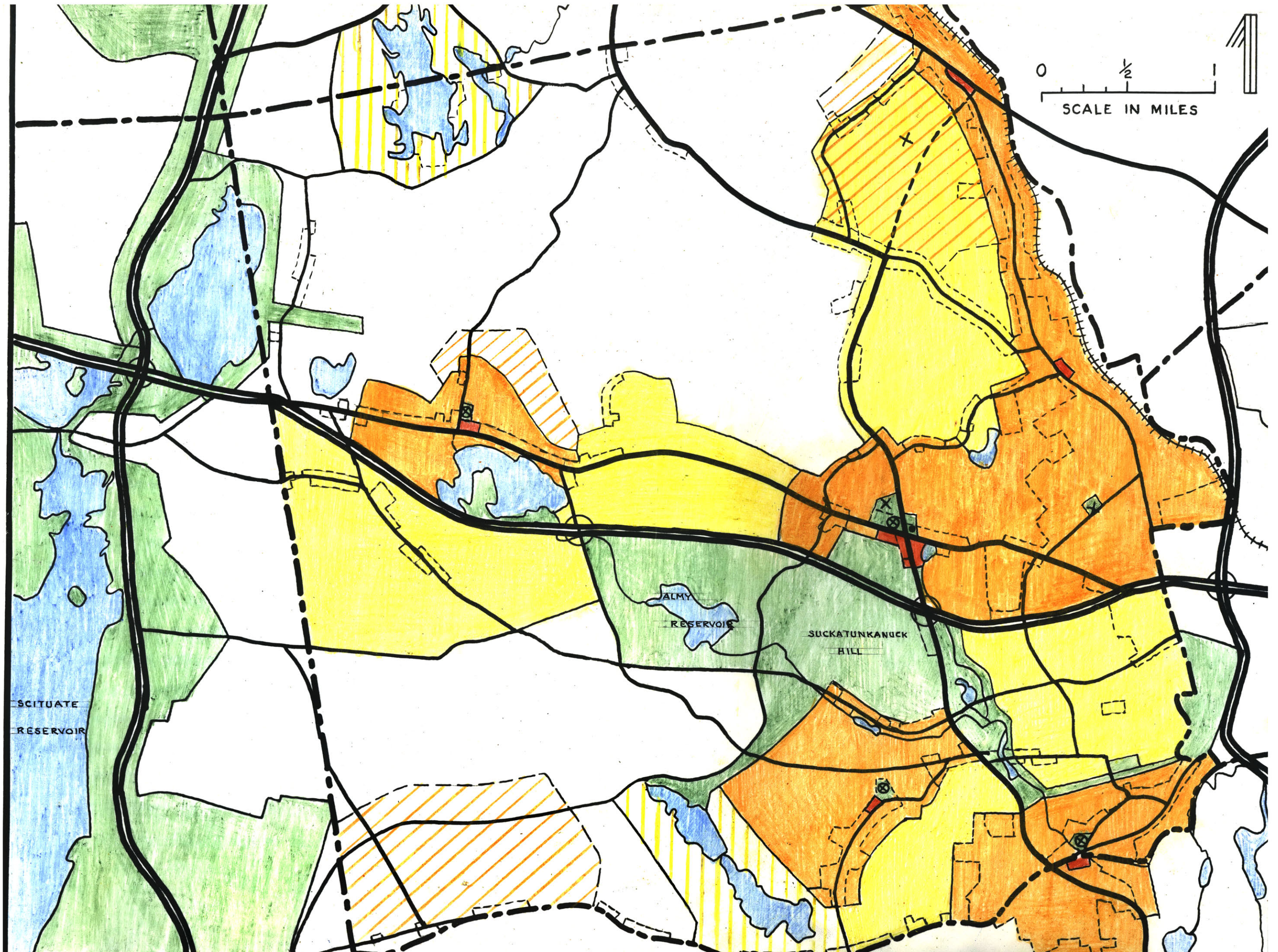
- 1). To follow the objective set forth in the general metropolitan plan of setting the size and density of the residential areas.
- 2). To develop a real town center at the present junction of Routes 5 and 6 by providing a high school (the estimated 1970 population for Johnston is approximately 21,500 which is large enough to support one) and commercial center.
- 3). To tie this town center to a town public reservation which in turn would be connected to as many of the residential areas as possible. Sockanosset Hill, in the center of the town, lends itself ideally to this purpose, since it is presently wooded and undeveloped, much of it is too steep for residential purposes, and it is adjacent to the Almy Reservoir which could be utilized for swimming.
- 4). To relocate Route 6 through Johnston, making it a limited access highway and relating it to the residential areas in order to tie them in with a quick access route to the city.
- 5). To allow one-acre residential zones within the town which would not be provided with utilities. Since these areas would need school bus service, their location should be limited by this factor in order to minimize the cost to the town of this service.
- 6). To prohibit structures from being built in the rest of the town where land is less suitable for building and where the cost of servicing scattered dwellings would be unfeasible. An exception to this would be the provision of a few selected areas on or near lake shores where summer development would be permitted. It might be feasible to provide these areas with water lines which would only be operated during the summer months. This would effectively control the use of these dwellings for year-round residence.

S K E T C H   P L A N

J O H N S T O N

L E G E N D

	EXTENT OF EXISTING DEVELOPMENT
	GENERAL RESIDENCE
	ONE-ACRE RESIDENCE
	SUMMER RESIDENCE
	FUTURE EXPANSION AREA
	OPEN LAND
	COMMERCIAL
	PUBLIC
	EXISTING SCHOOL SITE
	PROPOSED SCHOOL SITE
	LIMITED ACCESS HIGHWAY
	HIGHWAY ACCESS POINTS
	TOWN LINE





The Town of North Kingstown  
Characteristics and Problems

North Kingstown differs substantially from Johnston in many respects. It has a very definite focal center in the village of Wickford, with commercial center, town hall, churches and other public or semi-public buildings all located within very short distance of each other. Its economy is diversified, and although the development of the Quonset Naval Base and a supply depot at Davisville (in the northern part of the town) were largely responsible for the 172% increase in North Kingstown's population from 1940 to 1950, the town also depends on its summer trade, fishing industry, and several textile mills for other basic employment. Located twenty miles South of Providence on the Narragansett Bay, the town has a certain amount of commuter population as well, indicated by the existence of one daily commuter train to Providence and by the special weekly rates of the Rhode Island Bus Company.

Interest by local citizens in the welfare and future of the town is noticeably evident. The town has a planning board, has passed both zoning and subdivision regulations and is presently engaged in a review of its taxing procedures for the purpose of equalizing assessments and bringing them up-to-date. Special committees are or have been in existence for the purpose of studying school problems, water main extensions, and attracting industry to the town.

A major industry in Providence has recently bought a 100-acre tract in North Kingstown for a branch plant, and the town has zoned another 700-acre tract adjacent to the New Haven Railroad for industrial use. The availability of this large amount of buildable land along a main railroad line should prove attractive to industries desiring to escape the land acquisition and traffic problems of the cities. The possible development of a steel mill in New London, Connecticut, would provide an additional impetus towards the increase in small metal products plants in Rhode Island, of which North Kingstown would undoubtedly get a share.

The present routing of Route 1 through the commercial center of Wickford and Route 102 through Lafayette and part of Wickford produces traffic congestion which is particularly severe during the summer months. The need for additional parking space in Wickford for the shopping district there further accentuates the traffic problem.

Much of the attractiveness of North Kingstown for summer residents is due to its location on the Narragansett Bay which affords excellent opportunities for swimming, boating and fishing. The village of Wickford is in itself quite charming because of the fine architecture and historical interest of many of its old houses and the attractiveness of the many inlets of the Bay which reach right into the heart of the town. The fishing and pleasure boats anchored within a stone's throw of the shopping district lend a special interest to the scene.

In order to keep the Bay waters free from pollution, there is need for installation of a sewage disposal plant to serve not only the town but the Quonset Naval Base installation. Although the central portion of the town is served by water (from a new system installed in 1939), there is need for construction of a secondary loop, which could operate in case of damage to the main line, and for extension of lines to other built-up sections of the town.

The rapid growth of North Kingstown in the last decade (from 4,604 to 12,566 persons) has produced a substantial school problem for the town in its need for expansion of the school plant. Both the high school and the elementary school in Wickford have been added to recently, and a new school for Davisville is planned. This latter can probably be financed in large part through Federal aid, as much of the housing near Davisville is Navy-owned, and there is talk of 500 more dwelling units being built in that area by the Federal government.

North Kingstown, like so many other Rhode Island towns, is made up of a number of small villages, many of which have grown up around a central source of employment or around a trade or recreation center. Lafayette, Belleville, Davisville and Hamilton are examples of neighborhoods that have developed around central textile plants which in Lafayette and Hamilton are still operating. Wickford and Saunderstown formerly were sailing points for steamers and ferries crossing the Bay to

Jamestown and Newport. Wickford's development as the town center was fostered by a branch line connection of the New Haven Railroad from Wickford Junction to the Newport steamer dock in Wickford. With the development of the automobile, this line lost its usefulness and was finally abandoned. Saunders-town has retained its original character of being predominantly a quiet summer community for higher-income families. In recent decades, a number of small cottage-type summer developments have sprung up at various points along the Bay shoreline. Much of the remainder of the potentially desirable summer residence area is in large estate or farm holdings and has been placed under a 40,000 square foot minimum lot size zone by the town's zoning ordinance. Any effort to reduce the restrictiveness of this zone would probably be vigorously opposed by the property owners.

### Solutions and Opportunities

The estimated 1970 population for North Kingstown of 22,800 is about equal to that estimated for the town of Johnston. Many of the suggested points in a plan for Johnston apply equally well to North Kingstown. But the principal difference between the two towns which should be recognized in any plan is substantially as follows.

North Kingstown, located at a greater distance from Providence, is more dependent on its own resources for employment, recreation, and social life and is less dependent on close proximity to major routes leading to the central cities. This characteristic, which has been described as "satellitic", should be fostered by recognizing the tendency towards a more urban nature in the town. Specifically, this can be done by allowing a higher density form of development in the center of the town (a tendency towards this already exists) and by relating areas of new residential development as closely as possible to the center (balancing this with recognition of existing nuclei) so that the physical as well as social connection will be a real one.

Davisville and Saunderstown, located at opposite extremities of the town, will have to remain separate neighborhoods, since their physical connection with the center is remote.

















The following specific proposals are made:

- 1). As in Johnston, control of the size and density of residential areas to provide sufficient area for expected residential growth at a reasonable level of economy to the town for schools and services.
- 2). Public ownership of the major waterway shorelines in the town to preserve and develop them for the enjoyment and beautification of the whole town. This does not apply to the Narragansett Bay shoreline except for the provision of a town beach area.
- 3). Public ownership of the Secret Lake watershed in order to protect the town's water supply. This ownership may eventually have to be extended to include the Belleville Pond watershed. Since both these ponds are too swampy for either public recreational or private development, their acquisition should be neither costly nor difficult. However, the location of the Rodman textile manufacturing plant at the upper end of the Belleville Pond suggests the acquisition of the Secret Lake first and the Belleville Pond only if necessary.
- 4). Relocation of Routes 1 and 102 as indicated on the metropolitan sketch plan and the sketch plan for North Kingstown.
- 5). Substantial provision of areas for summer development of all types. The installation of water mains to the higher density summer development areas where water supply is a problem, but operation of these mains only during the summer months.
- 6). Adequate control of the remaining open land through zoning, subdivision regulations and building codes. Here a 5-acre agricultural zone as well as a 1-acre residential zone would be justified on the basis of available land with soil suitable to agricultural use.

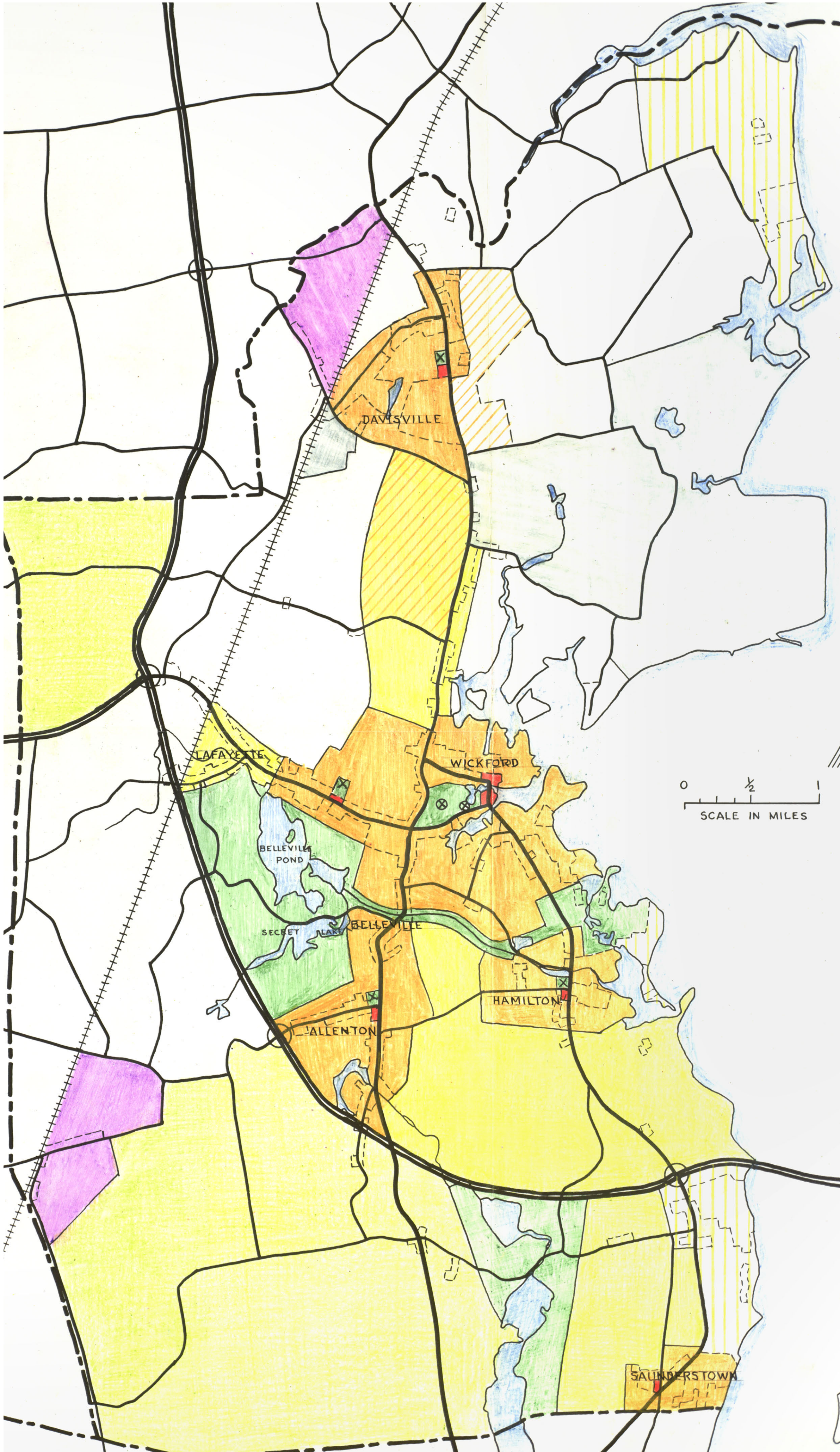
S K E T C H   P L A N

N O R T H   K I N G S T O W N

LEGEND

	EXTENT OF EXISTING DEVELOPMENT
	GENERAL RESIDENCE
	ONE-ACRE RESIDENCE
	FIVE-ACRE AGRICULTURAL
	SUMMER RESIDENCE
	FUTURE EXPANSION AREA
	OPEN LAND
	COMMERCIAL
	INDUSTRIAL
	PUBLIC
	GOVERNMENT PROPERTY
	EXISTING SCHOOL SITE
	PROPOSED SCHOOL SITE
	LIMITED ACCESS HIGHWAY
	HIGHWAY ACCESS POINTS
	TOWN LINE





DAVISVILLE

LAFAYETTE

WICKFORD

BELLEVILLE POND

SECRET LAKE

BELLEVILLE

HAMILTON

ALLENTON

SAUNDERSTOWN

0 1/2 1  
SCALE IN MILES

## RECOMMENDED CONTROL MEASURES

Introduction

Many of the problems inherent in uncontrolled expansion and development are evident in the Providence metropolitan area and will become more and more difficult to remedy unless proper control measures are instituted.

Uncontrolled development along major highways not only seriously impairs the value of these highways for traffic use, but blocks off the countryside behind from easy access and enjoyment. The cost of dispersed settlement is economically apparent in the problem of financing schools, utility line installations and extensions, road maintenance and other public services. The social cost to a community that results from the lack of proper recreational, educational, cultural and civic facilities that are easily available to all is more difficult to measure, but the great wealth of literature on the subject indicates its importance.

It is felt that control measures properly instituted and applied do not destroy a democratic way of life but enhance it by creating and preserving conditions under which it can foster. Guidance and direction are fully as important for the growing or changing community as they are for the individual, for, after all, what is the community but an amalgamation of individuals.

Following are listed the major problems in the metropolitan area that need control together with the measures proposed for their solution. These latter are, as nearly as possible,

arranged in the order in which they are discussed in the following pages. It is felt that these measures would aid substantially in carrying out, in a democratic manner, a plan for development of the metropolitan area.

There is need for:

Proposed Measures

1. Planning on a metropolitan scale

State planning agency with responsibility for metropolitan planning.

In order to provide for the best allocation of land uses and the means for serving these uses without unnecessary duplication of facilities, comprehensive planning for the entire metropolitan district is necessary.

2. Planning in the local municipalities

Revision of state planning enabling legislation.

Planning activity in each individual town as well as city of the metropolitan district is necessary in order to provide a basis for zoning, subdivision controls, assessment policy, etc. Towns need aid with their local problems - for example, the town of Johnston's need for help in connection with a re-evaluation of its real estate for assessment purposes.

3. Reduction of excessive costs to individual municipalities

Metropolitan council recommended as new governmental unit to have jurisdiction over those functions which can be achieved more efficiently and economically at the metropolitan level.

Zoning ordinance - designed to achieve more functional pattern of land use.

Subdivision controls - requiring developer to assume major portion of development costs.

State grant-in-aid program - to more equitably distribute revenues between localities.

Revision of foreclosure proceedings - to achieve cost reductions, make tax delinquent land more attractive to buyer

### 3. Reduction of costs (continued)

The lack of utilities in Johnston and the need for water line extensions and future need for sewage disposal facilities in North Kingstown constitute potential cost problems for these towns. The cost of schools has also been indicated, in the case of both Johnston and North Kingstown, as a major problem.

In order to carry out the provisions of a master plan; the acquisition of large tracts of land by the State would, in some cases, constitute a hardship to individual towns by removing, in effect, a portion of the town's taxable property.

Premature subdivision in portions of the metropolitan area has resulted in vacant lots reverting to the towns for taxes. This removes property from the tax roll and also imposes a heavier burden for public services on both the town and the property owner for properties developed in such areas.

### 4. Means of effectuating a land use policy, through:

- |   |   |
|---|---|
| a). Coordination of land uses                   | <u>Zoning enabling legislation</u>  |
| b). Control of location of development          | <u>Zoning ordinance</u><br><u>Building codes</u><br><u>Housing department of metropolitan council</u> |
| c). Control of quality of development           | <u>Subdivision controls</u><br><u>Building codes</u>  |
| d). Incentives for fostering best use of land   | <u>Revision of forestry laws</u>  |
| e). Extension of public land acquisition powers | <u>Revision of foreclosure proceedings and extension of public eminent domain power</u>               |

The problem of achieving units in the structure of a town that are physically and, thereby, more socially cohesive is inherent in the land use policy that has been recommended for the metropolitan area. So is also the preservation of the countryside against uncontrolled encroachment by urban expansion.

In order for a metropolitan plan to be meaningful, provisions for effectuating it at that level are also needed. The effectiveness of adequate control measures in one town is materially reduced if the adjacent municipalities have either no controls at all or ones that are inferior, both of which latter situations are prevalent at the present time.

Inadequate incentives now exist for fostering the best use of land. For example, much potentially valuable forest land in the metropolitan area is lying idle with no attempt made towards its proper development.

Although this thesis has been concerned with only that part of the metropolitan district which is located within the State of Rhode Island, it is recognized that many of the metropolitan problems are interstate in character, and every effort should be made to secure interstate cooperation towards their solution.

State Planning and Development Agency

The state planning agency shall be charged with the responsibility for obtaining basic data and doing research on the resources of the state. It shall prepare a general guide plan for development in the state with particular emphasis on that portion of the state which is within the metropolitan district. It shall cooperate with existing local agencies in so far as is practicable and shall aid in the creation of new ones where necessary. It may render aid to local planning agencies for specified purposes and shall be responsible for coordinating the plans of these agencies.

The aid to local planning boards shall be made available in the form of staff assistance, financial aid, or both, for the purpose of assisting in the preparation of local master plans and capital budget programs. Other state planning assistance shall be paid for at cost by the local municipalities.

The state planning agency shall have the power of mandatory referral for the plans of other state departments and the departments of the metropolitan council.

Planning Enabling Legislation

The state enabling legislation for local planning shall be amended to require that all municipalities over 5000 population in size have a planning board. (This requirement affects all municipalities within the metropolitan district). Any other municipality may have a planning board.

The planning board shall be charged with the responsibility for preparing a comprehensive master plan for the municipality within the framework of the general guide plan for the metropolitan area.

(1)  
Metropolitan Council

Passage of state legislation defining the metropolitan district and enabling the people within the district to elect a nine-member council at large. This council shall be the governmental body for the district for certain purposes listed below and shall have the power to appoint department heads with the approval of the council. The council shall have jurisdiction over water, sewerage and public housing within the district and may also be given jurisdiction over public transit facilities if that measure becomes necessary. It shall have the power to enact zoning legislation for the metropolitan district as detailed under Zoning (see p. 34). Although not considered within the scope of this study, the metropolitan council should probably also have jurisdiction over public health facilities and services. It shall have the power to raise revenue for the carrying out of these functions by taxation of local municipalities on a weighted population basis, by the issuance of bonds, by charges for services provided, and by acceptance of state grants for specified purposes.

The power of the housing department shall include the

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(2) It will be noted that, in this recommendation for a metropolitan council, only a limited number of activities are put under its jurisdiction. Unlike other metropolitan districts, the Providence metropolitan district comprises such a large proportion of the state, in both population and area, that it is felt that many activities, such as over-all planning, highway development and provision of major recreation areas, can be carried out more efficiently for the metropolitan area at the state level than at the metropolitan level. It is only those activities which are considered metropolitan in character, as far as constituting a problem is concerned, that have been considered for action at the metropolitan level.



power to acquire land for and to construct not only public but middle-income housing and may include the power to give aids to limited-dividend private housing corporations. It may also acquire land for the development of new communities or the expansion of old ones. One of the duties of this housing department will be to cooperate with local redevelopment agencies in providing housing for family relocation, particularly from the central cities.

### Zoning - Enabling Legislation

The problem of achieving zoning control over the entire metropolitan area is one that is not easily solved, since, on the one hand, it would be difficult to achieve public acceptance of a measure that would delegate powers of zoning to a metropolitan zoning board, and, on the other, the retention of full zoning control by the local municipalities leads to the problems of coordination or ineffective control that have already been mentioned. Because of these facts, several proposals are submitted below for consideration. The first probably stands the least chance of public adoption but would provide the most complete form of zoning coordination. The second and third allow for progressively more local authority and initiative, but still retain a certain measure of overall control by the metropolitan council.

Proposal A - The state zoning enabling legislation shall be changed or amended to require each local planning board to appoint one of its members to a metropolitan zoning board. This board shall be established upon completion of the guide plan for the metropolitan area by the state planning agency. The state planning agency shall also appoint one of its members to serve on this board. The purpose of this board shall be to prepare a comprehensive zoning ordinance for the metropolitan area and to establish major areas of land use allocation for the central cities within which their individual ordinances shall be framed. The ordinance shall be based on the general

guide plan for the metropolitan area and on local master plans where the latter are available. Public hearings shall be held by the metropolitan council before enactment of the ordinance into law by the council.

The board shall be eligible to receive state aid in the preparation of the ordinance either through staff assistance, financial aid, or both.

The board shall be required to hold preliminary public hearings in the various towns and cities of the metropolitan district in order to secure an expression of public opinion as an aid in drawing up such an ordinance. These hearings would also help to generate public interest in the ordinance as well as give an opportunity for explanation for its need. Both of these factors would be of importance in achieving public acceptance of the ordinance as finally proposed.

The board shall be required to submit an ordinance to the metropolitan council within two years from the date of its establishment. In case of inability to accomplish the formulation of an ordinance within that time, the council may extend the period for not more than an additional year upon presentation of satisfactory evidence that the metropolitan zoning board is giving the problem adequate consideration. In case the board fails to meet these requirements, it shall automatically be abolished, and the job of preparing the ordinance for the metropolitan district shall be turned over to the state planning agency.

The zoning ordinance which is prepared shall include provision for the local town councils to appoint local zoning boards of appeal. Two or more municipalities may contract to form a joint zoning board of appeal. The zoning ordinance shall be administered in each town by the local building inspector. All appeals which involve a special exception or a potential change in the zoning ordinance shall be referred first to the local planning commission for review and recommendation.

The zoning ordinance shall be reviewed in each municipality at five-year minimum intervals by a joint committee consisting of the local planning board, the local board of assessors, the zoning board of review and a staff member of the state planning agency. This review shall be for the purpose of proposing revisions in the zoning ordinance in accordance with need and to bring it in line with changes in the master plan. The committees shall submit their recommendations to the metropolitan council for consideration. Public hearings shall be held by the metropolitan council in the town where any zoning changes are proposed before either rejection or enactment into law by the council.

Proposal B - This proposal would be substantially the same as the first, but instead of the metropolitan zoning board preparing a comprehensive zoning ordinance, it would establish a framework of broad land-use allocations within which the local planning bodies would prepare detailed ordinances for their individual communities.

Proposal C - In this case, the preparation of the zoning ordinance would be left entirely in the hands of the local planning body, but with the requirements, established by state law, that it meet minimum specifications in regard to conformity to a master plan and that it be approved by the metropolitan council before enactment into law.

## Zoning - Major Provisions of a Typical Ordinance

### Explanatory Comments

The principal categories in a metropolitan zoning ordinance which would apply to the metropolitan area only are outlined with detailed specifications for certain portions of these categories. The attempt has been to outline a comprehensive zoning ordinance which would allow flexibility within each use zone where that flexibility seemed desirable.

For example, a general residence zone based on density standards has been established in place of the usual breakdown into several types of residential zone. This was done, because it is felt that, as long as sufficient light and air is provided to all dwelling structures, it is unimportant how the various types of structure are distributed. In fact, the usual residential zoning fosters a deadly monotony of structural type which, it is felt, can be avoided in this manner.

On the other hand, most zoning ordinances allow a residential or any other less restrictive use in a commercial or industrial zone. The need for protecting these zones against other uses is probably fully as great as the need for protection of the residential zone, so, in the following recommendations, these zones have been limited accordingly.

The rural zoning aspects of the ordinance as recommended are justified on the following basis. As has been indicated previously, the expected population growth in the next twenty years will only require a very small proportion of the total

land that is available. If we accept the assumption that this growth should be relatively concentrated rather than dispersed in character, the need for preventing or limiting development in those areas that are less suitable for development becomes evident. The problem, then, in the metropolitan area, is as much a rural as an urban one and should be dealt with accordingly.

## Zoning Ordinance

### Types of Zones to be Established (2)

#### Open Land Zone -

Forestry, recreational and agricultural uses permitted  
Residential, commercial and industrial uses prohibited  
Other uses at the discretion of the local planning  
commission.

#### Agricultural Zone -

(in those communities where agriculture assumes an impor-  
tant enough role to warrant the establishment of a separate  
zone)

Agricultural use and farm residences permitted  
Recreational and forestry uses permitted  
Other uses prohibited except by special exception  
5-acre minimum lot size  
250' minimum frontage  
30' setback requirement for all structures

#### One-acre Zone -

Agricultural use and single-family residences permitted  
Institutions, hospitals, cemeteries, etc. permitted at  
discretion of local planning commission.  
1-acre minimum lot size  
150' minimum lot frontage  
30' setback requirement for all structures

#### Summer residence Zone -

Size lot required would depend on drainage characteristics  
of land (possibility for pollution of waters for  
swimming, drinking, etc.)

#### General Residence Zone -

(May be one or more zones, the density standards to vary  
with location - typical requirements listed below)

Minimum lot size - 8000 sq. ft. for single-family  
6000 sq. ft. per family for two-family structure  
5000 sq. ft. for each additional family  
80' minimum frontage for single and two-family lots  
100' " " for three-family and over  
Side and rear yard spacing shall be not less than 10' and  
shall be at least equal to the height of the building  
25% maximum lot coverage for single and two-family struc-  
tures (lot coverage for three-family plus structures  
is adequately controlled by the density requirements)  
No maximum height of structure



Zoning Ordinance (continued)

## Commercial Zone -

(May be split into general commercial and neighborhood commercial zones in the larger communities)

Residential uses prohibited in general commercial zone  
In general commercial zone, non-obnoxious small industries allowed if employing not more than 25 persons and occupying lot not to exceed 10,000 sq. ft. in size.

## Industrial Zone -

Residential uses prohibited  
Certain wholesale and other commercial uses permitted  
(such as restaurant, drug store and barber shop)

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(2) The present status of zoning legislation is such that the establishment of an open land zone in a metropolitan area might be considered an "unreasonable exercise" of the police power. In order to make this measure more acceptable to the legislative body enacting it and to the courts, the following provision for compensation to the property owner in such a zone who is deprived of the development value of his property is suggested.

All land within the open land zone shall be assessed at its minimum base value. This base value (per acre) shall be established by law upon enactment of the zoning ordinance. Any property owner who feels deprived of the development value of his land by the establishment of this zone has the right to appeal to the zoning board of appeal for a variance, provided that the original assessed value of the land was greater than the base value. If the appeal board feels the variance is not justified, the case shall be sent to court where the amount of damages to be awarded to the owner shall be established.

### Subdivision Regulations

A subdivision shall mean the division of any tract of land into two or more lots. A lot shall mean any tract of land which conforms to the minimum lot size requirements as established in the zoning law or as granted by special exception with the approval of the local planning commission.

In any subdivision, the minimum lot frontage shall be 80', except, at the discretion of the planning board, not more than 20% of the lots may be smaller in both size and frontage, provided that the average lot frontage in such a subdivision is at least 100'.

All lots shall have access to a public street, either accepted or as provided on a subdivision plat which has been approved by the local planning commission. Where block interiors have not been subdivided, provision must be made for future street access to this land.

Subdividers shall be required to install streets and utilities.

In areas designated on the master plan for the town as "future expansion areas", a subdivider may apply to the local planning commission for approval of a subdivision plat in such an area, provided that any such initial subdivision shall be not less than 50 acres in size and shall provide for not less than 100 families. Two or more subdividers may combine to meet these requirements, provided that their subdivision plats are contiguous and that their planned dates for completion of the subdivision layouts are not more than one year apart.

### Building Codes

It is recommended that a uniform building code for the state be adopted.

Plans and specifications for alternate materials or methods of construction not covered by the ordinary provisions of a building code may be submitted to the local building inspector or a state commissioner of public safety for approval. Upon preliminary approval by the commissioner of the material or construction method in question, the data shall be submitted to a state board of standards for a decision. If the action of this board is favorable, the use of such material or construction method shall be adopted as a regulation and submitted to all local building inspectors.

The building code shall prohibit construction on land with poor drainage conditions, unless it can be demonstrated that those conditions can be satisfactorily alleviated.

Program for Equalization of Revenues

An expansion in the state grant-in-aid program to local municipalities should be made in order to decrease the present heavy dependence of the municipalities on their property tax revenue and in order to equalize the disbursement of revenues to municipalities. This disbursement would be made on a weighted population basis, the exact method of weighting to be determined after further study of the types of grants-in-aid to be made and the needs of the communities. Further grants in lieu of taxes would be made to those municipalities whose revenue was substantially decreased by the effectuation of master plan proposals.

It is recommended that a state board of assessment review be established in order to see that assessment procedures in the municipalities reach a minimum standard of conformity, which standard would be established by law. This board would periodically check on local assessment policies. Where serious deficiencies were evident and not corrected by the time of the next check, the local municipality would be subject to punishment by withdrawal of some portion of state grants until proper correction was made. The municipality would have the right of appeal to a court.

Foreclosure Proceedings - Municipal Acquisition of Land

In foreclosure proceedings on tax delinquent land, the present practice of allowing the owner to redeem his property within a year after a public tax sale has been held should be revised to allow this redemption period to elapse before the tax sale takes place. This would eliminate the element of uncertainty that the present prospective buyer now has concerning the tax title of the property, and thus would make such properties more attractive and easier for the municipality to sell. It would also remove the opportunity for people to buy at a tax sale tax delinquent lands that are likely to be redeemed in order to get back the premium the original owner is required to pay in addition to the purchase price. The foreclosure proceedings should further be revised in order to allow municipalities to take title to land that is delinquent and that is not redeemed within the proper time period without having to first put it up for public sale.

Provision should be made for all tax delinquent land to be reviewed by the local planning commission and classified for future use in one of the following categories - a) suitable for private ownership and return to the tax roll, b) in need of improvement (replating of streets, filling of low areas, etc.) before return to private ownership, c) suited for a specified public use, or d) waste land.

Provision should be made for the municipality to be able to buy land in an open land zone, where it is assessed for its base value only, for a nominal fee and use it for town forest or recreational purposes or hold it until a proper use can be found. The municipality should also be able to lease land in its ownership. The town's eminent domain power should be extended to allow the blocking out of holdings of public land for forestry as well as recreation purposes.

Forestry Laws

The existing forestry law shall be revised to allow lands used for forestry purposes and meeting the requirements in the law to be taxed at a minimum base value for the land until the crop is harvested. The tax then will be a percentage of stumpage value. Persons holding 20 acres or more of land that meets the requirements for forestry holdings may apply to the state for aid in the management of the land, such aid to be paid for by the owner at cost.

The purpose of these revisions would be to encourage the greater use of land for forestry purposes and the better management of such land.

## CONCLUSION

The control of expansion and development in the metropolitan area, as presented herein, is based on plan objectives for the metropolitan area, as illustrated by the metropolitan sketch plan and by more detailed plans for two selected towns. A number of problems inherent in uncontrolled expansion have been brought out and the control measures have been designed to alleviate or prevent these undesirable situations from occurring. Further research would undoubtedly reveal additional problems in need of attention, and, certainly, further study of the various sectors of the metropolitan area would bring out variances in the type and extent of problem to be handled.

The plan objectives and the control measures set up to aid in the effectuation of these objectives are not presented as being the complete or only answer. They should, rather, be considered as one means towards a solution, a means that is believed valid. However, further research into the requirements and desires of the metropolitan population would be required before any control measures could be instituted. It is recognized that the success of any program depends on its degree of acceptance by the people. Therefore, in order to democratically plan for the control of land, communications and services that are used by the people, they should be consulted and made a part of the program wherever possible. It is true that this will slow down the effectuation process, but the results should be more satisfactory and long lasting.



## APPENDIX

### Population Forecast

The 1970 population for the metropolitan district was forecast by extrapolating the curves of the total populations of various parts of the district. These parts are as follows: Area I - the central cities of Providence, Pawtucket and Central Falls, Area II - the secondary tributary areas adjacent to the central cities (consisting of East Providence, North Providence, Johnston, Cranston and Warwick (3)), and Area III, the remainder of the metropolitan district (the municipalities of Barrington, Warren, Bristol, Woonsocket, Cumberland, Lincoln, North Smithfield, Smithfield, East Greenwich and North Kingstown). This breakdown was made, because it was felt that greater accuracy would result from the extrapolation of curves representing areas with different rates of growth. This can be seen from Figure I where it appears that the central cities have had their period of greatest growth and are now beginning to show a slight decline in population, the secondary areas are still in the process of experiencing a rapid rate of growth, and the rate of population increase in the remainder of the area is still relatively slow and steady. We might expect from this that population growth is a function of area. For example, the central areas grew rapidly until their usable area was in large part occupied or rendered unusable, at which time the growth was transferred to the adjacent or secondary area. If continued logically, this would indicate that, under normal circumstances, the growth would be transferred in the same manner to the outer area when the secondary area was filled. However, if the population growth of the country levels off before the end of the century, as predicted by Thompson and Whelpton in their population forecast for the country as a whole, the need for utilizing the outer area to any great extent may never materialize.

An increase of 60,000 in the population of the metropolitan district was obtained by this method of curve projection. However, it was felt that the objectives of the plan for the metropolitan area required a somewhat different distribution of this population increase within these three areas in order to achieve a somewhat lower density in the central urban area and to retain a desirable proportion of open space in the secondary area. Keeping a total increase of 60,000 persons, the curves were revised (see Figure I) in line with these factors.

A check was made on this total figure by estimating the increase in labor force that such an increase would provide. It was assumed that the percentage of total population in the

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(3) West Warwick is included with Warwick here, since it was part of Warwick before 1910.

labor force in 1950 was the same as that in 1940 (56%). Assuming also that there would be a somewhat higher percentage of persons over 15 years of age in 1970 than in 1950 (77% instead of 74%) and that the percentage of those persons over 15 years of age who were in the labor force would drop somewhat (from 56% to 54%) due to a lowering of the retirement age, a figure of 14,000 persons increase in the labor force (a 5% increase over the 1950 labor force) was derived. This figure seemed reasonable in view of the fact that the economy of the area is expected to remain relatively stable.

The breakdown of population increase or decrease for each of the towns and cities was achieved in the following manner. The percentage increase or decrease of population for each town and city for each two-decade period since 1900 was plotted in order of smallest to greatest increase in each case. This produced a series of curves which were similar enough in character to give a basis for plotting a curve for the 1950-1970 period. The individual towns and cities were then fitted into this curve, coordinating their individual potentiality for growth within the metropolitan district with their arrangement in such a manner that the sum of their population increases and decreases would equal 60,000. The percentage and numerical increase or decrease of population for each municipality by area is shown in Table IV.

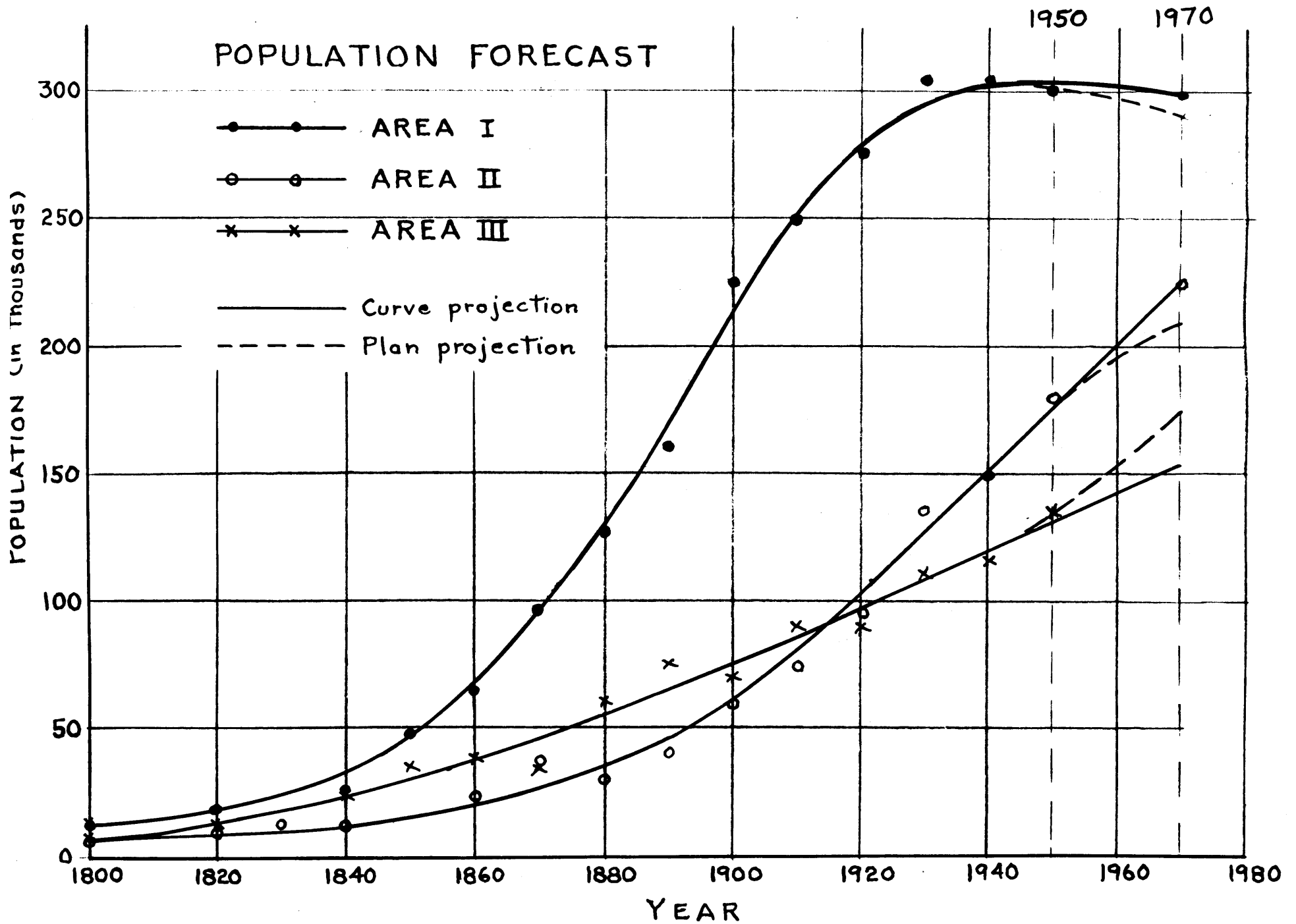


FIGURE :

TABLE IV: POPULATION INCREASE, 1950-1970, BY AREA AND BY MUNICIPALITY

% Increase or Decrease	Municipality	Area I	Area II	Area III
22	Central Falls	- 5300		
- 10	East Providence	-	- 3600	
- 3	Providence	- 7700		
0	Pawtucket	0		
4	Warren			300
7	Bristol			900
10	North Prov.		1380	
15	Woonsocket			750
18	Cranston		10000	
22	Cumberland			2800
26	Warwick *		16100	
31	East Greenwich			1500
37	Lincoln			4100
45	Barrington			3700
55	North Smithfield			3100
67	Johnston		8500	
81	North Kingstown			10200
100	Smithfield			6600
Total		- 13000	35980 - 3600 <u>32380</u>	40700
			GRAND TOTAL	- 60,000

\* Includes West Warwick

TABLE V: 1950 AND 1970 POPULATION (as estimated), BY  
MUNICIPALITY, PROVIDENCE METROPOLITAN DISTRICT

Municipality	1950 Population	1970 Population (estimated)
Central Falls	23,610	18,300
East Providence	35,791	32,200
Providence	247,700	240,000
Pawtucket	81,180	81,200
Warren	8,505	8,800
Bristol	12,311	13,200
North Providence	13,798	15,200
Woonsocket	50,186	57,700
Cranston	55,130	65,100
Cumberland	12,825	15,600
Warwick	62,069 *	78,200
East Greenwich	4,887	6,400
Lincoln	11,020	15,100
Barrington	8,223	11,900
North Smithfield	5,605	8,700
Johnston	12,735	21,200
North Kingstown	12,566	22,800
Smithfield	6,598	13,200
<b>TOTAL</b>	<b>664,739</b>	<b>725,000</b>

\* Includes West Warwick

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