5-1968

Land Use Change and Natural Resource Problems on Eastern Long Island

John Edward Carroll

Western Michigan University

Follow this and additional works at: https://scholarworks.wmich.edu/masters_theses

Part of the Geography Commons

Recommended Citation

https://scholarworks.wmich.edu/masters_theses/3167

This Masters Thesis-Open Access is brought to you for free and open access by the Graduate College at ScholarWorks at WMU. It has been accepted for inclusion in Master's Theses by an authorized administrator of ScholarWorks at WMU. For more information, please contact maira.bundza@wmich.edu.
LAND USE CHANGE
AND NATURAL RESOURCE
PROBLEMS ON EASTERN LONG ISLAND

by

John E. Carroll

A Thesis
Submitted to the
Faculty of the School of Graduate
Studies in partial fulfillment
of the
Degree of Master of Arts

Western Michigan University
Kalamazoo, Michigan
May 1968
ACKNOWLEDGEMENTS

The author would like to acknowledge with gratitude the cooperation and courtesy extended by the following individuals:

Professor Henry A. Raup, Department of Geography, Western Michigan University, who is primarily responsible for guidance during the course of writing this thesis.

Professor Charles F. Heller, Department of Geography, Western Michigan University, who assisted in guiding the thesis to completion.

Mr. Horace D. "Linc" Wells, Suffolk County Cooperative Agricultural Extension Agent, in Riverhead.

Mr. Henry Krasjewski, county agent for the Agricultural Stabilization and Conservation Service (ASCS) of the U. S. Department of Agriculture, in Riverhead.

Professor Gerald Olson, of the Department of Agronomy, New York State College of Agriculture (Cornell University), in Ithaca.

Mr. Lester C. Eckart, Deputy Commissioner, Suffolk County Department of Public Works, in Yaphank.

These, and many others, aided the progress of field research considerably, and appreciation is hereby extended to them.

John E. Carroll
MASTER'S THESIS

CARROLL, John Edward
LAND USE CHANGE AND NATURAL RESOURCE PROBLEMS ON EASTERN LONG ISLAND.

Western Michigan University, M.A., 1968
Geography

University Microfilms, Inc., Ann Arbor, Michigan
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I  BACKGROUND TO THE STUDY AREA</td>
<td>7</td>
</tr>
<tr>
<td>The Physical Environment</td>
<td>8</td>
</tr>
<tr>
<td>Development of the Settlement Pattern</td>
<td>28</td>
</tr>
<tr>
<td>Existing Land Use within the Physical Environment</td>
<td>33</td>
</tr>
<tr>
<td>II  RECENT CHANGES IN THE POPULATION AND ECONOMIC STRUCTURE OF EASTERN</td>
<td></td>
</tr>
<tr>
<td>SUFFOLK COUNTY</td>
<td>38</td>
</tr>
<tr>
<td>Population Growth</td>
<td>39</td>
</tr>
<tr>
<td>Economic Activities</td>
<td>46</td>
</tr>
<tr>
<td>Agriculture of Eastern Long Island</td>
<td>51</td>
</tr>
<tr>
<td>Land Use Change After World War II</td>
<td>68</td>
</tr>
<tr>
<td>III  LAND PLANNING IN THE LIGHT OF FUTURE</td>
<td></td>
</tr>
<tr>
<td>SOCIO-ECONOMIC CHANGES</td>
<td>90</td>
</tr>
<tr>
<td>IV   CONCLUSION</td>
<td>119</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>128</td>
</tr>
</tbody>
</table>
# LIST OF MAPS

<table>
<thead>
<tr>
<th>Map</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long Island--Political Divisions</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Land Forms of Eastern Long Island</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Communities and Islands of Eastern Long Island</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Soils of Eastern Long Island</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>Major Transportation of Eastern Long Island</td>
<td>50</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>Average Annual Temperature and Precipitation Data, Bridgehampton, N.Y.</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Soil Productivity, Suffolk County, New York</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>Suffolk County Population: 1950-1966</td>
<td>41</td>
</tr>
<tr>
<td>4</td>
<td>Per Cent Increase of Population: 1960-1967</td>
<td>42</td>
</tr>
<tr>
<td>5</td>
<td>Per Cent Population Increase of Ten Towns: 1950-1960</td>
<td>43</td>
</tr>
<tr>
<td>6</td>
<td>Population Change in Selected Communities: 1960-1966</td>
<td>44</td>
</tr>
<tr>
<td>7</td>
<td>Land in Farms: Eastern Suffolk (in acres)</td>
<td>53</td>
</tr>
<tr>
<td>8</td>
<td>Land Use: Suffolk County</td>
<td>54</td>
</tr>
<tr>
<td>9</td>
<td>Farms by Size in Suffolk County (per cent)</td>
<td>54</td>
</tr>
<tr>
<td>10</td>
<td>Average Farm Size: Eastern Suffolk</td>
<td>57</td>
</tr>
<tr>
<td>11</td>
<td>Value of Suffolk County Agriculture, by Products (millions of dollars)</td>
<td>58</td>
</tr>
<tr>
<td>12</td>
<td>Comparative Acreage Change in Potatoes: Long Island, New York, and United States (1944-1964)</td>
<td>58</td>
</tr>
<tr>
<td>13</td>
<td>Southold Land Use, 1962</td>
<td>71</td>
</tr>
<tr>
<td>14</td>
<td>Southampton Land Use, 1962</td>
<td>72</td>
</tr>
<tr>
<td>15</td>
<td>Shelter Island Land Use, 1962</td>
<td>73</td>
</tr>
<tr>
<td>16</td>
<td>Riverhead Land Use, 1962</td>
<td>74</td>
</tr>
<tr>
<td>17</td>
<td>East Hampton Land Use, 1962</td>
<td>75</td>
</tr>
<tr>
<td>Tables</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>18 Town of Southold: Land Assessed Valuation, 1967</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>19 New Construction in the Town of Southold, 1957-1966</td>
<td>87</td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION

Long Island, and especially Suffolk County, is growing in population at a rate over five times the New York State average, and also over five times the national average, enabling Suffolk to label itself the "fastest growing county in the United States."¹ Such rapid growth has caused a marked division to occur in the county between the recently heavily populated western towns, and the still rural and slower growing eastern towns, the latter of which form the study area for this thesis. The impact of such rapid and great population growth has had a profound effect in changing the face of the land and the very way of life in this newly suburban fringe area; this thesis will illustrate some of the results of the impact of such growth on a relatively small, semi-isolated peninsula-like island not far from the borders of the largest city in North America.

This island is approximately 120 miles east-west and 23 miles north-south, being the largest island

¹Interview with H. Lee Dennison, County Executive of Suffolk County, New York, June 15, 1967.

1
immediately adjacent to the Atlantic Coast of the United States proper. Bounded by the Atlantic Ocean on the east and south, Long Island Sound on the north, and the East River on the west, it is about 20 to 25 miles south of the mainland shore of Connecticut. The division under study, the five eastern towns of Suffolk County, extends from about 68 miles east of New York City to the eastern tip.

Long Island is politically sub-divided into four counties: Kings, Queens, Nassau, and Suffolk. The first two, Kings and Queens, are politically part of New York City, while Nassau and Suffolk are politically independent of the city. Nassau County is composed of three towns and numerous incorporated villages, while Suffolk County is composed of ten towns and several incorporated villages. The study area consists of the five easternmost towns in the county: Southold, Southampton, East Hampton, Riverhead, and Shelter Island (see Map 1).

---


These five contiguous towns were chosen for study because:

1) they bear a great deal of similarity with one another in terms of both their physical environment and economic geography;

2) they are distinctly separate from their five western Suffolk neighbors and the towns of Nassau County in both their economic geography and population growth rate; and,

3) according to post-World War II history and the pattern of migration which has been established in the post-war years, these towns might be expected to attain population growth rates and an increase in economic activities not unlike their neighbors to the west in the not too distant future.

Almost thirty years ago, in 1940, the Bureau of the Census recorded the county's population officially as only 197,355, with the 1950 figure reaching 390,655. Today, the county's population figure is estimated at slightly more than one million\(^4\) (the last official census in 1960 recorded 666,784).\(^5\)

\(^4\)Suffolk Sun, September 9, 1967, p. 3-A.

This fantastic growth in population, while largely confined to the five western towns of Suffolk County thus far, is expected to expand into the five eastern towns in the near future. Such an increase in population makes a study of initial land use change of great importance for the implementation of proper land use planning programs in the future. The entire county has undergone rapid and dynamic change in the years since the end of World War II, and it is the purpose of this thesis to explore some of the natural resource problems and land use changes as they have initially occurred in the thus far relatively stable eastern towns. The periods of comparison are the late 1940s (as representative of pre-growth conditions) and the early 1960s (as representative of the present situation). The study is somewhat facilitated by the existence of air-photos taken in 1947 and 1961.

Prior to the recent population increase of the late 1950s and early 1960s, there were few significant usage pressures on the land, nor were there any conflicts in land use planning. Zoning, as a tool of land use planning, was not widely accepted prior to this period. Due to transportation difficulties, including lack of road development, the area remained isolated from population growth experienced in Nassau County and some of the
western Suffolk towns following the war.

The absolute population differences to be found in the two ends of Suffolk County, together with recent Supreme Court decisions, have caused a movement toward political secession and a "new county" movement in the eastern towns under study. There seems to be at this time a growing fear on the part of both the residents and public officials of the towns that the individuality of the region is about to be swallowed up by spreading suburbanization (or urban sprawl, as some have called it). Hence, there is much renewed interest at this time in not only political secession, but also in deliberate land use planning by local government aimed at curtailing, or at least forestalling, this immediate threat of change and loss of identity.
CHAPTER I

BACKGROUND TO THE STUDY AREA

The western end of Long Island, part of which is in New York City, has of course seen the greatest degree of urban development, despite the fact that the east end study area towns were actually settled first. This seems to follow logically, however, when one realizes that the most direct access to the mainland is to be found in the extreme west, while the east has remained somewhat isolated until recent times. Three reasons may be used to account for the island's ideal situation with respect to rapid population increase:

1) direct access to the densely populated mainland;
2) physically, the island is definitely conducive to great population numbers based on a predominance of well-drained and low-lying sandy terrain which is easy to subdivide and dedicate for residential and commercial use; and,
3) a third factor which should be mentioned is lengthy proximity to several large bodies of water, not the least of which is the 115-mile shoreline fronting on the open Atlantic Ocean, a conducive factor for aesthetic beauty,
outdoor recreation, and moderate temperatures (especially in summer).

Thus, a study of the island's physical environment is called for at this point.

The Physical Environment

The eastern end of Long Island, encompassing the five towns studied in this thesis, is a land of gentle topography, with high elevations along north shore ridges, and gradual slope to sea level in southern marshes. Virtually all of the present-day landforms to be found on the island are the result of several stages of ice advance and retreat during the Pleistocene, and are typically glacial in nature. A secondary determinant of the island's landforms in more modern times has been water erosion (especially the forces of marine coastal erosion operating on the south shore).

The dominant geological force in the formation of Long Island as it exists today was the movement and termination of three major ice advances in the Wisconsin Glacial Period. Most of the present morainic material was deposited in the first stage, with diversity in

---

relief (i.e., a more irregularly broken surface topography) resulting from the second, and great modification of relief (i.e., a general flattening and wearing down) from the third advance. Glaciation is considered dominant in this formation since, with glacial deposits removed, the island would have only one-fourth to one-third of its present area, and possibly one-sixth of its present volume above sea level. The depression now occupied by Long Island Sound is considered to have been formed from the erosion of soft uplifted sediment in the early Cenozoic. In the late Cenozoic, the first ice sheet appeared, followed by a double advance and retreat of the second ice sheet in the Pleistocene, creating the present great morainal systems which exist, and the large outwash plain to the south (see Map 2). Later in the same era, Arctic climatic conditions brought a third re-advance of the ice, causing great modification of the island's surface and encroachment of the sea, and bringing complete separation from the mainland for the first time. From that period to the present, erosion,

---


especially marine erosion, has been dominant in altering terrestrial configuration.

The principal surface features are two terminal moraines, the more recent and rugged Harbor Hill Moraine paralleling the shore of Long Island Sound, the older and broader Ronkonkoma Moraine traversing the central part of the island in the west, while paralleling the Peconic Bay Shore of the South Fork in the east (see Map 2). Between these two ridges in the west lies the valley of the Peconic River drainage, bordered on north and south by the interglacial plateau. In the east, this trends into the depression of Peconic and Gardiner's Bays, broken in places by several islands. To the south of the mid-island ridge lies the largest single surface land area in the east end—the outwash plain; this plain slopes gradually to the wetlands bordering the coastal bays. A barrier beach is located along much of the south shore; on the remainder of this shore, the outwash plain slopes directly to the ocean.

Perhaps the most striking non-glacial landforms are the extensive south shore system of barrier beaches, baymouth bars, spits, lagoons, etc., extending from the Atlantic shore of Brooklyn east to Shinnecock Bay at the village of Southampton, and the less extensive but equally impressive system surrounding the interior bays
(Peconic, Gardiner's, etc.), and limited westerly areas on the geologically much simpler north shore. Almost the entire bulk of sandy material forming the great southern barrier beaches was carried by longshore currents, and has been derived from that area of the shoreline from Southampton to Montauk Point (see Map 3), now suffering from severe coastal erosion. Part of the materials forming similar features in the interior and north shore coast are derived from riverine deposition; however, the actual importance of such deposition is only speculation. All shorelines are of the submergent type.

The basic nature of the surface material on the island is porous sand; consequently, there is little runoff, and the drainage pattern is a rather simple dendritic type, decreasing in intensity and complexity from west to east, probably due to the more porous nature of the surface, and greater percentage of sand content in the east. The Peconic River, rising on the interglacial plateau, flows east to Peconic Bay and is the longest river on the island. It is the only river flowing in the five towns studied in this thesis; at least four other major rivers are found to the west (three flowing south to the south shore bays, and one flowing north to Long Island Sound).
Much has been made of the fact that, due to proximity to the Atlantic Ocean, Long Island Sound, and numerous large inshore bays, the island's temperatures are considerably more moderate than their mainland counterparts in Connecticut, upstate New York, or New Jersey, winters being somewhat warmer and less severe, summers being refreshingly cooler. In looking at the systematics behind the island's climatic regime (see Table 1 for average temperature and precipitation readings), we find that, according to the Koppen system of climatic classification, Long Island falls close to the line dividing "humid subtropical" and "humid continental" climates, with different authors placing it on different sides of the line. Although latitude would normally be considered sufficient for the latter category, the moderating effect of the water bodies tends to draw the area closer to the milder "humid subtropical" categories.

Average wind velocities are somewhat lower on the North Fork than the South Fork, the former being less exposed to the ocean. According to Free, Winkelblech, and Wilson, Montauk experiences a greater total wind

---

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>32.3</td>
<td>31.9</td>
<td>37.9</td>
<td>46.5</td>
<td>56.2</td>
<td>65.2</td>
<td>71.4</td>
<td>70.7</td>
<td>64.4</td>
<td>55.2</td>
<td>45.1</td>
<td>34.9</td>
</tr>
<tr>
<td>Precipitation</td>
<td>4.20</td>
<td>3.48</td>
<td>4.41</td>
<td>3.60</td>
<td>3.53</td>
<td>2.96</td>
<td>2.59</td>
<td>4.65</td>
<td>3.58</td>
<td>3.41</td>
<td>4.79</td>
<td>3.95</td>
</tr>
</tbody>
</table>

movement and a greater number of separate winds of more than fifty miles per hour velocity than any other point on the Atlantic coast (except, perhaps, Block Island, Rhode Island). This occurs mainly from December to March.

The island is peculiarly vulnerable to hurricanes and, indeed, all sea storms, being situated at right angles to all storms traveling north along the coast. Damage from these storms has been great, especially along the south shore, not only in terms of lives and property, but also in the promotion of salt-water intrusion into the fresh-water aquifers of the island, compounding man-caused intrusion problems.

However, the weather has many advantages, being tempered at all seasons by nearness to open water. Undoubtedly, one of the most important factors here is the lengthy frost-free season (175-195 days), the longest of anywhere in New York State, and of obvious significance to agriculture.

Unfortunately for agriculture, both deficits and excesses of precipitation are common. At the present

\[5\] Interview with Richard Hendrickson, Sr., Hill View Farm, Bridgehampton, N. Y., May 23, 1967.

time, the island is in the midst of an eight-to-ten year cyclic drought (tempered somewhat in the year of 1967), and lost 37" of precipitation from the normal expected in three years, nine months (as of October 1, 1966). 7 Crops have been carried over through widespread and highly successful supplemental spray irrigation, but water problems throughout the region have intensified as a result of both the drought and the increased demand for water for irrigation.

For human occupancy, the climate is considered quite good, being much cooler and "clearer" in summer than that in the city (due partially to a much lower concentration of pollutants in the atmosphere), and this is thought to be a factor in attracting migration from the metropolitan area. With moderate annual temperature and precipitation, and about two-thirds of summer days basically clear, 8 this relatively good agricultural climate is now playing a role, ironically, in destroying agriculture. In addition, eastern Suffolk's location adjacent to a heavily populated area suffering from extreme air pollution aggravates the problem.

Hendrickson, interview, loc. cit.

Ibid.
It has already been stated that Long Island's soils are basically well-drained sandy types, ideally suited in most cases for residential and commercial construction. Later in the thesis, the island's rich and very specialized agricultural production will be discussed. Hence, it is fitting in this survey of the physical environment to include the following treatment of the major soil types to be found in the east end study area, along with their basic corresponding uses.

According to Cline, the principal soil types occurring in the five eastern towns (located on Map 4) are:

1. Sassafras soils—generally well to excessively drained level soils, dominated by coarse-textured soils on gravel and sand; most extensive of all soils in county (nearly 1/3 of entire area); with Bridgehampton soils occupy outwash plain area; underlain with gravel, and consequently well-drained.

   a. Sassafras silt loam (Sa)—main body of North Fork, and west to Wading River area; high water-holding capacity (a factor of utmost importance in crop production).

   b. Sassafras loam (Sl)—drainage excellent (excessive in places); most extensive and widespread type.

   c. Sassafras sandy loam (Ss)—much in vicinity of Riverhead and Mattituck (loam and silt loam more retentive of moisture and hence more productive).

---

2. Bridgehampton (Bl)—generally well-drained, nearly level soils dominated by moderately coarse-textured soils on gravel and recent alluvium; dominant in principal Long Island potato-growing areas; good water-holding capacity; high degree of response to intensive fertilization; supplemental irrigation is a major factor in successful production.

3. Plymouth-Haven (P-H), (sometimes referred to as Galestown-Budd or G-B)—generally somewhat excessively drained hilly soils, also dominated by moderately coarse-textured soils on gravel and recent alluvium; characteristic of hilly areas of terminal moraines; sandy and coarse; generally poor for agriculture because of drought and rough topographic relief.

4. Greenport clay loam (G)—very heavy in contrast to the generally light soils of these areas; only 448 acres west of Greenport, and two small patches south of Sag Harbor; soil too heavy for most types of agriculture; fairly well suited, however, for grass, hay, and dairy pasture.

5. Sand (S)—not normally considered true soil; very widespread.

There are scores of sub-groups of these, as shown in the last comprehensive soil survey of the county. A new survey is now in progress.

Warner has summarized the soils of the eastern towns as follows:

---


Riverhead-Southold: Sassafras sandy and silt loams primary, Plymouth-Haven secondary.

Southampton-East Hampton: Plymouth-Haven and Bridgehampton primary, Sassafras secondary. (Bridgehampton soil has the greatest solum thickness, at 30" to 60", and is the best agricultural soil in the county.)

Shelter Island: a mixture of all, with Plymouth-Haven predominating.

Soils with the highest productivity in the area are Bridgehampton and Sassafras silt loams, Bridgehampton loam, and Haven loam. These grade down through the various Plymouth soils to sand and steep broken lands (see Table 2). A good correlation may be noted between agricultural and soil patterns.

Bowman, in his many observations of the area, has developed the following very simplified but also clear description of the soil pattern in his four categories:

1) stony loams and gravels (on the terminal moraines and north shore plateau);
2) coarse sandy loams (greater part of outwash plain);
3) fine sandy loams (outer fringe of outwash plain and in alluvial areas); and,
4) clay loams (transitional between marsh and beach sands).

**TABLE 2**

**SOIL PRODUCTIVITY, SUFFOLK COUNTY, NEW YORK**

<table>
<thead>
<tr>
<th>Soil</th>
<th>Productivity Rating (U.S.)</th>
<th>Corn</th>
<th>Vegetables</th>
<th>Potatoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridgehampton silt loam</td>
<td>3</td>
<td>5 (8)</td>
<td>7 (10)</td>
<td>8 (10)</td>
</tr>
<tr>
<td>Sassafras silt loam</td>
<td>3</td>
<td>5 (8)</td>
<td>7 (10)</td>
<td>8 (10)</td>
</tr>
<tr>
<td>Bridgehampton loam</td>
<td>3</td>
<td>5 (8)</td>
<td>7 (10)</td>
<td>8 (10)</td>
</tr>
<tr>
<td>Sassafras loam</td>
<td>4</td>
<td>4 (8)</td>
<td>7 (9)</td>
<td>7 (9)</td>
</tr>
<tr>
<td>Haven loam</td>
<td>4</td>
<td>4 (8)</td>
<td>7 (9)</td>
<td>7 (9)</td>
</tr>
<tr>
<td>Sassafras sandy loam</td>
<td>5</td>
<td>3 (6)</td>
<td>6 (9)</td>
<td>6 (8)</td>
</tr>
<tr>
<td>Bridgehampton sandy loam</td>
<td>5</td>
<td>3 (6)</td>
<td>6 (9)</td>
<td>6 (8)</td>
</tr>
<tr>
<td>Plymouth sandy</td>
<td>5</td>
<td>3 (6)</td>
<td>6 (9)</td>
<td>6 (8)</td>
</tr>
<tr>
<td>Tidal marsh</td>
<td>8</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Beach and dune sand</td>
<td>9</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*Land having the highest general productivity in the agricultural region in which it occurs is rated Grade 1 for that region. Land most productive for the specified crop in the U.S. equals 10. Figures in parentheses indicate the productivity of land on which production is obtained by the use of soil amendments, as lime, fertilizer, and manures (not including irrigation, however).

Source: Lounsbury, et al., 1928.
In their study of soil erosion on Long Island, Free, Winkelblech, and Wilson\textsuperscript{13} stated that 50 per cent of the island's soils are of such low water-holding capacity as to be essentially non-agricultural, 25 per cent are drouthy, and 25 per cent are well-suited to intensive agriculture.

Schaffrath\textsuperscript{14} states that, of six main soil categories in the eastern towns, fertility is generally low, but response to good management is great. Fertilization is justified.

In summation, soils range from agriculturally "useless" beach and dune sands, marsh, rocky and steep highlands to valuable Bridgehampton and Plymouth loams and silt loams, with a few good alluvial deposits. In terms of acreage, valuable loams and "useless" beach sands are dominant, with lesser amounts of other types present.

On the North American continent, Long Island properly must be classified as a variation on the temperate mixed deciduous forest dominant across southern New England and central New York State, although it has far fewer species or luxuriance of vegetation cover, and also

\textsuperscript{13}Free, Winkelblech, and Wilson, \textit{loc. cit.}, p. 4.

\textsuperscript{14}Letter from Llewellyn E. Schaffrath, Work Unit Conservationist, Soil Conservation Service, Riverhead, New York, October 20, 1966.
has "replacement" species common to more southerly areas. For example, over most of the island, and especially on the eastern end, can be found a stunted and commercially worthless scrub pitch pine forest of low height, rather than the tall stately and commercially valuable white pine forest of the mainland. The red cedar (most common in old field succession) replaces various spruces, while scrub forms of pine and white oak seem to fill the ecological niche of a wide variety of mainland deciduous species (hickory, elm, beech, maple, other oaks, etc.). In addition, the immediate south shore of the island shows some distinct elements of a more southerly flora (e.g., holly, shadbush, sweetgum).

In terms of land area, perhaps the primary natural vegetation appearing on the island as a whole, as well as in the eastern end, is the scrub oak--pitch pine ecological association. This is characteristic of the sandy, porous, extremely well-drained and relatively dry outwash plains. Scrub oak is slightly dominant over pitch pine. The association is known for very few accompanying shrub and herb species, rolling kettle-hole topography, some white cedar, and aquatics in the swamps; fires are frequent and common, but tend more to delay

15Bowman, loc. cit., p. 514.
and set back growth rather than destroy it. Some other stands, such as white pine near Sag Harbor, holly in a few areas, and others do occur in the "pine barrens." However, in general, the region is quite homogeneous.

The two other major vegetation zones, the mixed hardwood forests of morainal ridges and the coastal wetlands, are also quite widespread. One of the most striking species of the ridge forest is the flowering dogwood, one of the most widespread trees on the island. Other common hardwoods in evidence are chestnut, white and red oak, elm, beech, locust, and linden, with some maple. These forests have a rich luxuriance and variety of shrub and herb species, in contrast to the "barrens," and are best developed on the east end on the Harbor Hill Moraine and Sound shoreline of the North Fork, and, to a lesser extent, near the Peconic shores of the South Fork. Surprisingly, most of the Ronkonkoma Moraine in the east has the same vegetation as that of the outwash plain, namely, pine barrens. Mixed hardwood forest (mostly oak) also appears on the immediate south shore, where a high water table limits the development of barrens.

The third major vegetation zone is that of the biologically rich and economically valuable saline wetlands, found primarily around the south shore estuaries and
lagoons, and skirting all shores of Peconic and Gardiner's Bays. These associations of salt-grass, and many other grasses and sedges, are well known as "nurseries" for numerous commercially valuable marine fish, nesting and resting places for waterfowl and shorebirds, home for numerous shellfish species, and buffers against the brutal force of a storm-tossed sea. They are rapidly disappearing due to landfill and dredging operations, but much acreage still remains in eastern Long Island.

Other vegetation associations include grasslands and lichen-covered barrens (especially common in the Montauk peninsula), red cedar--grassland stage in "old-field" succession (universally common), shoreline-littoral associations of beach and marram grass, bayberry, and others.

A considerable amount of pine scrubland and beach-grass vegetation has been cleared for development. While some farm acreage has gone out of production in recent years, little has been permitted to go back into second growth forest, as has been the case in upstate New York counties and throughout New England. On eastern Long Island, "development" generally comes before new forest has a chance to establish on these lands.

At one time Long Island was an important contributor
to New York City's fuel-wood supply—this being the island's only sizable commercial forestry operation.\textsuperscript{16} Today, the market no longer exists, although a limited supply is present.

The various faunal forms appearing on the island can be classified by use of the three major vegetation zones (pitch pine-scrub oak, upland hardwood, wetlands), with the already mentioned wetlands having the greatest variety and productivity of animal life, and the "pine barrens" probably having the least such diversity and productivity.

Among the rich diversity present, some of the best known of the island's fauna are the following:

1. Large and varied populations of shore-birds, mostly in the wetlands.
2. Large numbers of waterfowl (including many oceanic or pelagic species), also mainly in coastal wetlands.
3. Relatively few reptiles and amphibians (mostly frogs, snakes, and turtles, with a few lizards or salamanders).
4. Several distinctive herds of uncommonly small white-tailed deer (far greater numbers than the

\textsuperscript{16}Hendrickson, interview, \textit{loc. cit.}
decreasing acreage of the range can support), found mainly in the taller scrub forests.

5. Fairly universally common small mammals (red fox, raccoon, opossum, etc.).

6. A very wide range of marine fish species, mollusks, and crustaceans, with a much lesser number of fresh-water varieties.

Several outstanding wildlife refuges and preserves (federal, state, county, and private) exist on the island, mostly in connection with waterfowl and wetlands. Several of these tracts of land are included in the various ecological associations on the east end.

As land use rapidly changes on eastern Long Island, natural faunal and floral associations are fast disappearing. In terms of the fauna, perhaps only those species (such as the squirrel and rabbit) which have demonstrated an ability to successfully co-exist with man, have a bright future, or any future at all. It is generally agreed by residents of the east end that land use change, at least in terms of "development," is directly responsible for declining wildlife populations of most species.

Development of the Settlement Pattern

There is a high degree of correlation between
topography and historical patterns of settlement in the five eastern towns composing the study area. Agricultural operations on the South Fork have traditionally developed on the gradually sloping sandy and relatively fertile soils of the outwash plain from just west of Southampton east to Amagansett, with the major population concentration being found in villages on this plain (see Map 3). The more hilly and less fertile morainal regions on the northern side of this fork, however, have never known much human settlement or agricultural development, with the exception of Sag Harbor, which developed quite independently of its region as an early entre-pôt and later a whaling center. The North Fork is a smaller copy of the pattern on the South Fork.

The pattern of settlement in the eastern towns is strongly reminiscent of that in New England, with the ever-present village green, parade ground, and cemetery in the heart of the village, and the older homes and commercial establishments grouped around or close to this green. The presence of large stately elms on many thoroughfares adds to the New England atmosphere. In addition, the two port towns of Greenport and Sag Harbor, with dense vertical settlement close to the harbor and lack of trees in the downtown area, also resemble numerous similar towns along the New England coast.
These strong resemblances are by no means accidental, as eastern Long Island was originally settled from Massachusetts Bay Colony via Rhode Island (Providence Plantations) and Connecticut in 1639. Southold and Southampton, simultaneously settled in 1640, were the first English colonies in New York. The settlement of East Hampton (1648) and Shelter Island (1652) followed through migration from the original two towns, with some new introductions, while Riverhead was formed in the 18th century (1792) by separating from Southold. Virtually all original settlements were coastal and based on port trade and fisheries, with subsistence agriculture toward the interior. During the course of the first two centuries, almost all connections and communications were by sea with coastal New England, due both to poor land transportation and the absence of settlement in central Long Island (serving as a buffer separating these colonies from Dutch New Netherland).

At the present time, the South Fork villages of Amagansett, East Hampton, Bridgehampton, Water Mill, and Southampton are all located on the fertile, agriculturally intensively developed outwash plain of the south. These villages grew originally as agricultural marketing and distribution centers, with later growth as resort centers occurring as a result of their immediate
proximity to the ocean. The advent of rail transportation with the laying of the Long Island Rail Road tracks connecting each of these villages with their western counterparts and New York City in the late 19th century certainly served to spur both aspects of this early development much more rapidly. In addition, two of these communities also developed as governmental centers.

"Peripheral" villages on the southern side of the South Fork, including Montauk on the east and Hampton Bays, Quoque, Westhampton Beach, and Eastport on the west, did not initially develop as agricultural centers, since this primary resource in the economy was never widely practiced near these communities, local soils being quite inferior. Eastport, however, did experience very specialized but much more recent growth in the agricultural sector with the organization of the duck industry in the early part of this century. It must be mentioned that all of these communities did have an early role to play in the resort industry.

On the upland morainal ridges on the northern side of the South Fork, only Sag Harbor (as aforementioned) developed as a population center, and this far more as a result of the natural advantages of the harbor than of characteristics of the terrain. Virtually all other present-day population settlement in this vicinity is a
result of fairly recent development for resort and retirement homes.

On the North Fork a similar pattern exists, whereby the very narrow but fairly rugged Long Island Sound shoreline ridges have never been traditionally cleared for settlement, until the recent advent of resort construction, while the central and southern parts of the fork have been intensively utilized for some time for crop agriculture. The only exception to this is the poorly drained marshland areas bordering Peconic and Gardiners Bays in a few locales. Consequently, the North Fork might be considered a sample of the South Fork in miniature. In western Riverhead Town, this pattern is duplicated, with the Peconic River bottoms serving as the southern boundary to intensive agriculture.

On Shelter Island, settlement patterns seem to be less distinguishable, and there is undoubtedly a lesser degree of correlation in this town between the settlement pattern and nature of the topography than is to be found on either of the two forks. Approximately the southeastern quarter of Shelter Island, basically lowland, has never really been developed to any degree, but this situation results more from nature of the ownership than to the relief of the terrain.
Existing Land Use Within the Physical Environment

As has been implied in foregoing paragraphs, the nature of settlement patterns has largely developed around the presence or absence of traditional agriculture in a given area; in turn, successful agricultural production is, of course, very much dependent on the pedologic regime prevalent in such a given area. Hence, a study of the close correlation existing between the natural soil type and the present land use patterns on eastern Long Island is certainly justified, and appears as follows:

1. P-H (Plymouth-Haven soils areas):

   Montauk Point area—utilized for recreation (a large state park and commercial dude ranch); military installations (Air Force, Coast Guard); private campgrounds; virtually no agriculture.

   Fishers Island—military installations (Coast Guard and Army); private estates; no agriculture.

   Gardiners Island—one large private estate.

   Shelter Island—mostly large and medium size tracts of private lands; game preserves; a small village; some low production local gardening; formerly small farms and large gardens.

   Gardiners and Peconic Bay side (northern side) of South Fork—composes about half of South Fork between Montauk Village and Shinnecock Canal; little or no agriculture today; a few low production patch farms in past years; largely forested today, with main land-clearing for villages (especially Sag Harbor and environs) and residential development; only recently
developing region (except for Sag Harbor) in comparison with the settled region to the south; few main arteries; distinctly upraised and rolling morainal surface; also occurs in two large patches west of Shinnecock Canal--both areas densely forested amid pine barrens and not settled.

North Fork--occurs only on shoreline strip along Long Island Sound; mostly heavily forested on rough topography; residential settlement only recently developing.

Plum Island--much of forested and undeveloped portion of island.

Robins Island--forested and unsettled.

2. B1 (Bridgehampton soils areas):

Lake Montauk--small section; limited farming.

South side of South Fork--mostly separated from P-H by sand (S) and one section of Sassafras silt loam (Sa); in most places present right down to dune sand on ocean front; mostly flat lands in intensive potato production; some dairy and vegetable crops; mainline of Montauk Highway and Long Island Railroad passes over this soil type; major villages of East Hampton, Bridgehampton, and Southampton are established on this soil; most economically valuable soils district on Long Island (in terms of agriculture).

3. Sa, Si and Ss (Sassafras soils):

Sa--one medium sized section midway between Jessup's Neck and Mecox Bay on South Fork, separating Bridgehampton from Plymouth-Haven soils; relatively flat to slightly rolling terrain; utilized by large dairy agriculture, with a duck farm on this type near Mecox Bay; also, very rich but relatively droughty open large farm areas of the North Fork; dominant region on North Fork extends to either shore; planted in potatoes, cauliflower, strawberries, various vegetables, some dairy and poultry; main Long Island agricultural region in terms of total production (not production per acre, however);
level to gently rolling, but not nearly as flat as Bridgehampton soils area; much scattered farm residential settlement (including major villages of Southold and Greenport); soil found throughout Orient Peninsula.

S1—(Sassafras loam)—large patch in western Riverhead Town; utilized for extensive potato and cauliflower farming.

Ss—scattered patch around North Fork near Riverhead, and especially on south side coastal areas of Peconic Bay; less settled (except shoreline waterfront residence), and less developed than richer Sa farm lands to the north; very flat; much low-lying and poorly drained; scattered sections in small farming operations; much wetland; major summer resort area of North Fork (along with Sound shoreline); wide patch in East Marion, utilized by mixed farming, with emphasis on strawberries.

4. S (Sand):

South Fork—Napeague area and in a stretch westward separating Bridgehampton soils from Plymouth-Haven soils; rarely farmed; generally flat to rolling terrain; vegetation sparse here (beach grass, numerous berry-bearing shrubs); south of Southampton Village, all of barrier beach, Shinnecock Indian Reservation (utilized on reservation for some agriculture, mostly potatoes, and sparse settlement), major portion of Southampton Town west of Shinnecock Canal; terrain varies from rolling in the interior to flat along the shore; Hampton Bays, Quoque, Westhampton Beach villages located on this type; settlement sparse or absent north of Montauk Highway; considerable non-farm settlement (resort and residential) south of Montauk Highway; natural vegetation mostly pine barrens grading into taller deciduous forests southward (due probably to the fact that water is closer to the surface here).

North Fork—type surrounds and underlies all of settled area of Riverhead, and occurs underlying Mattituck village area; also in scattered coastal areas to the east.
5. **G (Greenport clay-loam area):**

Greenport area—one block of this type extending almost shore to shore west of Greenport Village; no agriculture; one tree farm operation (white pine), (only one in eastern Suffolk, so far as the writer knows); sparsely settled until recently; today has commercial development along Route 25, with some resort and residential.

Sag Harbor area—two small patches occur south of Sag Harbor; under natural deciduous forest cover.

There is also a certain degree of correlation between the soil type and the type of crop grown:

1. Potatoes are primarily restricted to Bridgehampton soils on the South Fork, but are widespread on Sassafras silt loam on the North Fork.

2. Cauliflower is grown on Sassafras silt loam and, to some extent, on Sassafras sandy loam, all on the North Fork.

3. Strawberries grow best on Sassafras sandy loam, especially in the Greenport-East Marion area of the North Fork, but are grown on other North Fork Sassafras soils as well.

4. Dairy operations are most common on Plymouth-Haven soil types of the South Fork (especially southwest of Sag Harbor), but occur in scattered locations on most other soil types (the degree of correlation is probably less here than with field crops).

5. Nurseries are found on all soil types, with emphasis on Bridgehampton soils.

6. Duck farms largely occur on sand and Sassafras sandy loam. (It should be noted, however, that the industry demands a coastal water inlet for its operation, and it is probably coincidental that these sites are mostly on sandy or sandy Sassafras soils.)
The eastern end of Long Island, thus, has been blessed essentially with one of the richest soils in the world from the point of view of potato production, Bridgehampton loam, and a better than average soil type for both potato and cauliflower production, the sassafras soils. On the contrary, however, much of east end acreage is composed of exceedingly poor infertile sandy soils which are, in many areas, excessively well drained, and generally are useless for productive agricultural operations. The greater part of the acreage within the study area is of the latter basically infertile type. This has not, however, greatly slowed down land use change and "development," as will be seen in Chapter II.
CHAPTER II

RECENT CHANGES IN THE POPULATION AND ECONOMIC STRUCTURE OF EASTERN SUFFOLK COUNTY

The strong correlation which seems to exist between natural soil type and utilization (at least in terms of traditional usage) of the land has already been discussed. Since increased population growth has led to many changes in the face of the landscape, foundation of the economy, and very way of life in the five eastern towns of Suffolk County, this chapter will discuss: (1) the nature of the oft-mentioned population growth in the study area and the adjoining region to the west; (2) the nature of present-day economic activities on both the North and South Forks; and, (3) the nature and background of present-day agricultural patterns, agriculture being traditionally the backbone of the east end's landed economy. Land use changes in these five towns in the period since World War II also will be described, differentiating and analyzing each of the three major categories of land use on eastern Long Island (agricultural lands, vacant lands and open space, and urban lands).
Population Growth

The population of the eastern towns is today relatively evenly distributed, with the communities of greatest number and population density being the county seat and financial center of Riverhead (10,569—including East and South Riverhead), Greenport (3,886), Southampton (5,284), East Hampton (2,044), and Sag Harbor (2,690). Of these, Riverhead, Southampton, and East Hampton are the governmental centers of their respective towns, while Southold is the historical center of Southold Town (see Maps 1 and 3). Greenport, former great commercial fisheries center and a community in decline in this century, is the main seaport, not only of the North Fork, but also of the entire east end. Sag Harbor, like Greenport—a former great fisheries center (whaling in this case), has also been in decline as a commercial center. In addition, Riverhead is the east-west geographical center of the county, causing it to be chosen as the seat of county government.

Western Long Island (including Nassau County and the five western towns of Suffolk County) has experienced

---

tremendous population growth in the years following World War II. Indeed, in the period 1950-1965, this area frequently led the nation (or ranked close to the top) in population growth rates. This was caused not by an especially high rate of natural increase, but almost solely by a very rapid out-migration of young families from New York City to the then rural districts within reasonable commuting distance of the city proper. Today, this area may be considered suburban in the truest sense of the word. A study of the population tables (Tables 3-6) will readily illustrate these very great rates of increase.

While the county of Suffolk as a whole had a growth rate of about 100 per cent in the period 1950-1960, the five western towns experienced a much higher rate (161.57 per cent). The westerly towns of Huntington and Babylon grew 165.69 per cent and 212.38 per cent respectively, while their eastern neighbors of Islip (most heavily populated town in the county) and Smithtown grew somewhat more slowly (142.01 and 139.82 per cent respectively) as did the more easterly and very large town of Brookhaven (146.84 per cent).

In very sharp contrast, the eastern towns, while growing at a pace greater than the national average for the period, differed sharply from their western
<table>
<thead>
<tr>
<th>Town</th>
<th>1950</th>
<th>1960</th>
<th>1966 (est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huntington</td>
<td>47,506</td>
<td>126,221</td>
<td>176,000</td>
</tr>
<tr>
<td>Babylon</td>
<td>45,556</td>
<td>142,309</td>
<td>186,171</td>
</tr>
<tr>
<td>Islip</td>
<td>71,465</td>
<td>172,959</td>
<td>243,004</td>
</tr>
<tr>
<td>Smithtown</td>
<td>20,993</td>
<td>50,347</td>
<td>90,717</td>
</tr>
<tr>
<td>Brookhaven</td>
<td>44,522</td>
<td>109,900</td>
<td>170,854</td>
</tr>
<tr>
<td>Riverhead</td>
<td>9,973</td>
<td>14,519</td>
<td>17,626</td>
</tr>
<tr>
<td>Southampton</td>
<td>17,013</td>
<td>27,095</td>
<td>33,686</td>
</tr>
<tr>
<td>Southold</td>
<td>11,632</td>
<td>13,295</td>
<td>15,409</td>
</tr>
<tr>
<td>East Hampton</td>
<td>6,325</td>
<td>8,827</td>
<td>10,930</td>
</tr>
<tr>
<td>Shelter Island</td>
<td>1,144</td>
<td>1,312</td>
<td>1,497</td>
</tr>
<tr>
<td>Suffolk County</td>
<td>276,129</td>
<td>666,784</td>
<td>938,846</td>
</tr>
</tbody>
</table>

### TABLE 4
PER CENT INCREASE OF POPULATION: 1960-1967

<table>
<thead>
<tr>
<th>Area</th>
<th>Per Cent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suffolk County</td>
<td>50.6 per cent</td>
</tr>
<tr>
<td>New York State</td>
<td>9.2 per cent</td>
</tr>
<tr>
<td>New York Metropolitan Area</td>
<td>8.0 per cent</td>
</tr>
<tr>
<td>United States</td>
<td>10.4 per cent</td>
</tr>
</tbody>
</table>

Source: Suffolk Sun, September 9, 1967, p. 3-A.
### TABLE 5
PER CENT POPULATION INCREASE OF TEN TOWNS: 1950-1960

<table>
<thead>
<tr>
<th>Western Towns</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babylon</td>
<td>212.38</td>
</tr>
<tr>
<td>Brookhaven</td>
<td>146.84</td>
</tr>
<tr>
<td>Huntington</td>
<td>165.69</td>
</tr>
<tr>
<td>Islip</td>
<td>142.01</td>
</tr>
<tr>
<td>Smithtown</td>
<td>139.82</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>161.57</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eastern Towns</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Hampton</td>
<td>39.55</td>
</tr>
<tr>
<td>Riverhead</td>
<td>45.58</td>
</tr>
<tr>
<td>Shelter Island</td>
<td>14.68</td>
</tr>
<tr>
<td>Southampton</td>
<td>59.26</td>
</tr>
<tr>
<td>Southold</td>
<td>14.29</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>41.14</strong></td>
</tr>
</tbody>
</table>

## TABLE 6

**POPULATION CHANGE IN SELECTED COMMUNITIES: 1960-1966**

<table>
<thead>
<tr>
<th>Community</th>
<th>Town</th>
<th>1960</th>
<th>1966</th>
<th>Per Cent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calverton</td>
<td>Rv.</td>
<td>965</td>
<td>1,254</td>
<td>29.9</td>
</tr>
<tr>
<td>Roanoke</td>
<td>Rv.</td>
<td>1,413</td>
<td>1,872</td>
<td>32.4</td>
</tr>
<tr>
<td>E. Riverhead</td>
<td>Rv.</td>
<td>1,443</td>
<td>2,160</td>
<td>49.6</td>
</tr>
<tr>
<td>Southampton</td>
<td>So. H.</td>
<td>4,582</td>
<td>5,284</td>
<td>15.3</td>
</tr>
<tr>
<td>S. Riverhead</td>
<td>So. H.</td>
<td>1,572</td>
<td>1,843</td>
<td>17.2</td>
</tr>
<tr>
<td>West Tiana-</td>
<td>So. H.</td>
<td>1,285</td>
<td>2,699</td>
<td>110.0</td>
</tr>
<tr>
<td>E. Quogue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hampton Bays</td>
<td>So. H.</td>
<td>1,431</td>
<td>1,925</td>
<td>34.5</td>
</tr>
<tr>
<td>Flanders</td>
<td>So. H.</td>
<td>1,248</td>
<td>2,088</td>
<td>67.3</td>
</tr>
<tr>
<td>Mattituck</td>
<td>So.</td>
<td>1,274</td>
<td>1,549</td>
<td>21.5</td>
</tr>
<tr>
<td>Amagansett</td>
<td>E. H.</td>
<td>1,095</td>
<td>1,401</td>
<td>27.8</td>
</tr>
<tr>
<td>Springs</td>
<td>E. H.</td>
<td>1,320</td>
<td>1,775</td>
<td>34.4</td>
</tr>
</tbody>
</table>

counterparts. Southampton, the largest in both land area and absolute population, led the field with a growth rate of 59.26 per cent, while East Hampton, to the east on the South Fork, being geographically farthest from New York, grew only 39.55 per cent. Riverhead, having the most heavily populated individual community, far outstripped its North Fork neighbor, Southold, in growth (45.58 per cent for Riverhead, only 14.29 for Southold). Tiny Shelter Island, the most isolated and also the smallest town on all of Long Island, vied with Southold for slow growth honors. Thus, the average increase for this period in the eastern towns was only 41.14 per cent (see Table 5).2

From all indications, it would certainly seem that the five eastern towns composing the study area are now on the brink and are about to experience considerably higher growth rates than has been the case in the past. This can be seen in Table 6, which indicates population increase for the more recent 1960-1966 period, based on Long Island Lighting Company estimates for the latter year (this company, the largest public service utility on Long Island, is widely accepted as an accurate source

for population estimate data in any given year).

Economic Activities

The mainstay of the rural economy of the North Fork is crop agriculture, primarily potatoes and cauliflower, with some strawberries, Spanish onions, and duck crops. The two towns on this fork, Riverhead and Southold, also lead all Long Island in agricultural production. In addition, commercial fisheries (especially menhaden at Greenport, and various other fin-fish and shellfish at other Southold points), local government and private aviation in western Riverhead Town, contribute considerably to the economy. Tourist activities (mostly seasonal cottage and motel rental and largely water-based activities) are universally important, but are far less so than on the South Fork.

The larger area of the South Fork is greatly dependent on water-based summer tourist activities as the mainstay of its economy. This local industry has reached a highly sophisticated level of development here, the area being able to offer a cool and pleasant summer climate, long stretches of wide ocean and bay beaches, some

---

3 Interview with Lester M. Albertson, Supervisor of the Town of Sothold, New York, June 7, 1967.
fresh-water areas, highly rated fishing and shellfishing, great historical heritage, striking coastal scenery in places, good transport routes, and accommodations of all types for a bulging and rapidly expanding metropolitan population. Unfortunately, this sector of the economy is rather strictly limited in its activity to the period from May 20 to about September 15, and is virtually absent in the remaining months. Although a breakdown of seasonal population growth by towns is not available, growth for the east end is estimated to be between 100,000 and 200,000. According to the Long Island Lighting Company, most of this increase is on the South Fork.

Other sectors in the local economy include the following:

1. High quality but a really limited crop agriculture, mostly in southeastern Southampton and southwestern East Hampton towns, with other small scattered farms occurring in western Southampton and northern East Hampton towns

---


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
(plus large duck farm operations near Mecox Bay and extreme western Southampton Town).

2. Commercial fisheries at Amagansett, Montauk, and Hampton Bays (Shinnecock Inlet).

3. Light industry at Amagansett (fertilizer manufacture from fish products), and Sag Harbor (plastics, aircraft parts, electronics, and watches).

There are also two non-resource based sectors:

1. A major United States Air Force Base at Westhampton Beach, and a subsidiary air force station at Montauk (in addition to several Coast Guard installations and facilities).

2. A four-year degree-granting college at Southampton.

Shelter Island Town, with its small population (1,497), has a rather simple economy, based primarily on income brought in from wealthy summer residents, yacht clubs, golfing, and general tourist activities. There is some agriculture (more of an intensive garden than an extensive farm nature), and some limited commercial shellfishing. However, service industries, town government, and education are dominant.

The southern towns--with the greatest land area and seemingly greatest potential for development--are feeling
a much greater and more rapid influence from population increase than are the northern towns. If the proposed bridge or bridges across Long Island Sound to Connecticut or Rhode Island should be constructed from the North Fork, or if the proposed construction of an international jet-port at Calverton in Riverhead Town should become a reality, the rate of development on the North Fork would most certainly increase and soon overcome the now faster South Fork (although this is disputed by the Southold Town Supervisor). However, there can be no reasonable doubt that the entire eastern half of Suffolk County would be quickly and dramatically affected by either or both of these developments. Whether or not such rapid "development" is desirable will be explored in a later chapter.

In conclusion, due to a greater economic dependence on land in the North Fork (namely in agriculture), change in land use has been much slower here, with change being most noticeable along the shoreline and, to a lesser extent, along the main transportation artery, Route 25. (see Map 5). On Shelter Island, land use change has been slow, not only because of inaccessibility, but also because of the economic dependence of the island on a

6Albertson, interview, loc. cit.
MAJOR TRANSPORTATION FACILITIES
OF EASTERN LONG ISLAND

Source: Gulf Tourguide Map (Rand-McNally, 1967)
stable upper class resort population in the summer.

In contrast, change on much of the South Fork has been great, due to a lack of dependence on land-consuming agriculture (with the exception of the one main potato-growing district), and also largely due to the availability of great tracts of vacant land.

This situation can be more clearly seen in text and tables in forthcoming sections of this chapter.

Agriculture of Eastern Long Island

Eastern Suffolk County has traditionally been a highly important center of agricultural production for not only New York State but also the entire Northeast. Not only does the county have more kinds of agriculture and the highest value of crop production of any county in the state, but it is also a major national supplier of potatoes (third of 3,072 counties in the nation), late cauliflower (first county in the nation), and ducklings (also first county in the nation, with more than 75 per cent of total U. S. output). Furthermore, several soil scientists are of the opinion that Bridgehampton loam soil, found in the central part of the

7Interview with H. D. Wells, Suffolk County Agricultural Agent, Riverhead, New York, May 24, 1967.
South Fork, is the most valuable soils association known for the cultivation of white (Irish) potatoes. The great bulk of the island's agriculture is found in the five eastern towns under study.

The first agriculture in the east end and, indeed, on the entire island, was of a subsistence type, mostly located immediately inland from the small seaport communities and consisting of corn and other vegetables. The limited and small-scale cultivation of tobacco for export was the only exception to this rule. In years following, a small but steadily expanding dairy and livestock industry developed throughout the island, with great growth occurring particularly on the island's only natural grasslands, found on western Long Island. This pastoral period gradually gave way to higher value commercial crop agriculture in the latter nineteenth century, a form of agriculture which reached its peak farm acreage immediately after World War II and, with some exceptions, has declined in acreage since (see Tables 7 and 8). However, this agriculture has increased in value with each year, with productive yield also being on the increase. According to the County Agricultural Agent, "... fewer but larger farms (see Table 9) now growing about the same acreage as in 1940 but with a much higher yield per acre produce 60 to 70 per cent larger total production ..."8

8Ibid.
<table>
<thead>
<tr>
<th>Town</th>
<th>1875</th>
<th>1935</th>
<th>1945</th>
<th>1950</th>
<th>1954</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Hampton</td>
<td>30,384</td>
<td>10,357</td>
<td>6,910</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-17,061</td>
<td>16,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Southampton</td>
<td>67,787</td>
<td>13,101</td>
<td>10,746</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Riverhead</td>
<td>33,643</td>
<td>26,795</td>
<td>27,955</td>
<td>27,037</td>
<td>19,123</td>
<td>22,649</td>
</tr>
<tr>
<td>Southold</td>
<td>30,393</td>
<td>17,298</td>
<td>14,839</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-16,586</td>
<td>16,165</td>
<td>16,520</td>
</tr>
<tr>
<td>Shelter Island</td>
<td>7,113</td>
<td>2,453</td>
<td>1,249</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: prior to 1950 -

from 1950 on -
### TABLE 8

**LAND USE: SUFFOLK COUNTY**

<table>
<thead>
<tr>
<th>Category</th>
<th>1950</th>
<th>1954</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Area (in acres)</td>
<td>590,080</td>
<td>590,080</td>
<td>590,080</td>
</tr>
<tr>
<td>Acres in Farms</td>
<td>123,346</td>
<td>99,752</td>
<td>89,776</td>
</tr>
<tr>
<td>Per Cent of Land in Farms</td>
<td>21</td>
<td>17</td>
<td>15</td>
</tr>
</tbody>
</table>

### TABLE 9

**FARMS BY SIZE IN SUFFOLK COUNTY (PER CENT)**

<table>
<thead>
<tr>
<th>Type (in acres)</th>
<th>1950</th>
<th>1954</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 10</td>
<td>32</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>10-99</td>
<td>52</td>
<td>53</td>
<td>40</td>
</tr>
<tr>
<td>100-179</td>
<td>10</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>180-499</td>
<td>6</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>500-999</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

In the recent ten-year period 1950-59, farm acreage in Suffolk County decreased by almost one-fourth, constituting only 15 per cent of the county's total land area in the latter year (see Table 8). When checking back further to the nineteenth century one notes that, from 1875 to 1945, East Hampton's and Southampton's farm acreage each dropped by about five-sixths, Shelter Island's by six-sevenths, Southold's by one-half, and Riverhead's by only one-sixth. Much of this change in land use in earlier times undoubtedly resulted from the advent of more scientific agriculture and the de-emphasis on cultivating lands of only marginal value. This would be especially true in the Town of Southampton, where farm acreage declined from 67,787 in 1875 to only 10,746 in 1935. In more recent times (taking into consideration town statistical combinations), East Hampton and Southampton declined slightly in the decade of the 1950s, while Riverhead declined considerably in the early 1950s and increased its acreage in the later 1950s, and Southold-Shelter Island remained quite stable (see Table 7).

Following the state and national trend in change in average farm size, the very small farms (under ten acres) and the slightly larger 10-99-acre category decreased in number. On the other hand, each larger farm category increased its numbers (see Table 9). Increases in average
farm size were most pronounced in that eastern part of the county comprising the thesis study area, especially in the South Fork, where the East Hampton-Southampton agricultural district experienced a major increase from an average 96 acres in 1950 to 126 acres in 1959. Riverhead experienced a much smaller increase, as did the Southold-Shelter Island district (see Table 10).

In types of farms, dairy, poultry, other livestock, vegetables, and field crops all declined as a percentage of farms in the county, while general farming categories and fruit farms were stable, and miscellaneous categories (including sod farms, cut flowers, nurseries, and others) composed the major increase. The total cash value of Suffolk County agriculture is quite high ($70 million in 1965) and has increased somewhat in recent years (from $56.7 million in 1960). All major categories (potatoes, ducks and poultry, ornamentals, and cut flowers, nursery products, and miscellaneous categories—mostly sod) increased significantly, while some smaller categories (vegetables, dairy products, and strawberries) exhibited minor losses (see Tables 11 and 12).

The Long Island potato is, of course, world famous, the island ranking with Idaho and Maine as a producer of the highest quality and greatest number in the nation. The eastern towns are the major contributor to this
TABLE 10

AVERAGE FARM SIZE: EASTERN SUFFOLK

<table>
<thead>
<tr>
<th>Town</th>
<th>1950</th>
<th>1954</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Hampton and Southampton</td>
<td>96</td>
<td>109</td>
<td>126</td>
</tr>
<tr>
<td>Riverhead</td>
<td>90</td>
<td>92</td>
<td>101</td>
</tr>
<tr>
<td>Shelter Island and Southold</td>
<td>59</td>
<td>64</td>
<td>69</td>
</tr>
</tbody>
</table>

TABLE 11
VALUE OF SUFFOLK COUNTY AGRICULTURE, BY PRODUCTS (MILLIONS OF DOLLARS)

<table>
<thead>
<tr>
<th>Product</th>
<th>1960 Value</th>
<th>1965 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes</td>
<td>18.0</td>
<td>26.3</td>
</tr>
<tr>
<td>Ducks and Poultry</td>
<td>15.5</td>
<td>17.0</td>
</tr>
<tr>
<td>Vegetables</td>
<td>6.3</td>
<td>5.0</td>
</tr>
<tr>
<td>Dairy Products</td>
<td>1.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Strawberries</td>
<td>.9</td>
<td>.6</td>
</tr>
<tr>
<td>Ornamental and Cut Flowers</td>
<td>5.1</td>
<td>7.6</td>
</tr>
<tr>
<td>Nursery Products</td>
<td>3.3</td>
<td>5.6</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>---</td>
<td>18.0</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>56.7</strong></td>
<td><strong>70.0</strong></td>
</tr>
</tbody>
</table>

Source: Bratton, C. A., p. 2.

TABLE 12
COMPARATIVE ACREAGE CHANGE IN POTATOES:
LONG ISLAND, NEW YORK STATE, AND UNITED STATES (1944-1964)

<table>
<thead>
<tr>
<th></th>
<th>1944</th>
<th>1964</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Island</td>
<td>51,988</td>
<td>39,297*</td>
</tr>
<tr>
<td>New York State</td>
<td>195,000</td>
<td>69,700</td>
</tr>
<tr>
<td>United States</td>
<td>2,878,000</td>
<td>1,347,000</td>
</tr>
</tbody>
</table>

*1966

annual harvest, containing 87 per cent of all acres planted to potatoes on the island. Katahdin is the principal variety grown, occupying about 73 per cent of potato lands on the island, followed by Chippewa (nine per cent), Norgold (five per cent), and Russet Burbank (four per cent). There are several other varieties of only minor importance in this area. Green Mountain was once one of the principal varieties, but has now declined considerably. According to this same source, acreages by study area town are as follows (as of 1966):

<table>
<thead>
<tr>
<th>Town</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverhead</td>
<td>15,526</td>
</tr>
<tr>
<td>Southold</td>
<td>9,788</td>
</tr>
<tr>
<td>East Hampton and Southampton</td>
<td>9,118</td>
</tr>
<tr>
<td>Nassau County and western</td>
<td></td>
</tr>
<tr>
<td>Suffolk County</td>
<td>4,865</td>
</tr>
<tr>
<td><strong>Long Island Total</strong></td>
<td><strong>39,297</strong></td>
</tr>
</tbody>
</table>

In contrast, the 1944 total of all acreage in these towns and Nassau County was 51,988. This is similar to declines in state and national acreage (see Table 12).

In potato production, good storage facilities are a necessity; consequently, data on construction of such

---


10 Ibid.

facilities is of importance. Indicative, perhaps, of rising importance as a last frontier for potatoes on the island, Southold and Riverhead Towns lead the field in the construction of such facilities since World War II, with 64 per cent and 58 per cent increases, respectively. Nassau County and western Suffolk had only 40 per cent, while the South Fork had only 16 per cent (however, the latter area, being cooler and wetter, has less urgent need for storage facilities).  

A little more than half the island's production was marketed in bulk in 1966, while the remainder was graded and packed on the farm (with much sold at retail roadside stands). Since the environment on the North Fork is a little too warm for optimum potato growth and storage, cold storage (as automatic and efficient as possible) is necessary for economic survival.

Areas of greatest potato productivity in the eastern towns are the very flat oceanside lands of Bridgehampton loam in southeastern Southampton and southwestern East Hampton towns, largely in and around the communities of East Hampton, Bridgehampton, and Southampton. The other

---


13. Interview with Prof. Stewart Dallyn, Director, Long Island Vegetable Research Farm of Cornell University, Riverhead, New York, May 24, 1967.
primary area of production, largely on Sassafras loam soils on slightly rolling topography, is throughout most of Riverhead and Southold Towns, and west to the Brookhaven town line, somewhat inland. It should be noted here that, even though most production is in Riverhead and Southold Towns, edaphic and climatic conditions in Southampton and East Hampton Towns are considered superior for potato production. Production on Shelter Island Town is negligible.\textsuperscript{14}

In looking at Table 12, it can be seen that the decline in Long Island potato acreage (about 20 per cent) has not been as great as the overall New York State decline (about 65 per cent), nor, indeed, as great as the national decline of this crop (about 55 per cent). This is probably due to the high productivity of Bridgehampton and Sassafras soils on Long Island for the growth of potatoes, and also due to the fame of the Long Island potato on the regional and national market.

Cauliflower production is also important in the local

\textsuperscript{14} Interview with Evans K. Griffing, Supervisor of the Town of Shelter Island, New York, June 13, 1967.
agricultural economy, the county leading the nation in production of late cauliflower. The main area of cultivation coincides with the potato region, and many potato farmers are also involved in this activity. Acreage devoted to this crop is declining rapidly due to a particular labor problem: cauliflower has a high hand labor requirement because of uneven maturation. Cornell University's Vegetable Research Farm in Riverhead is attempting to develop an even-maturing variety suitable to this area in order to save the industry.15

Strawberries are widespread, especially on the North Fork from the Brookhaven-Riverhead town line to Orient. The county is second in New York State and 42nd in the nation in output, mainly in small scattered operations, many of only a few acres.16 Production has been on the increase since 1945, although acreage has remained very stable.

Other crops traditionally grown and fairly widespread are cucumbers, cabbage, sweet corn, peaches, and tomatoes, with new introductions being primarily Spanish onions, greenhouse tomatoes, and grass sod (for golf courses and

15Dallyn, interview, loc. cit.

16Wells, interview, loc. cit.
landscaping). Formerly, lima and snap beans and various grains (including wheat) were widespread, but have now almost disappeared, due both to disease and greater value in other crops. Rye, and more recently rye grass, have served as winter and alternate year cover crops. Vegetables and fruits, ornamentals, cut flowers, etc., are widespread in garden-type agriculture. A few sheep and cattle operations are still functioning, but are not expected to survive very much longer. Dairies are more numerous, as are poultry farms (both chickens and turkeys) but are fast declining, as previously mentioned. In vegetable growing, the county ranks eighth in the state, while rating 70th in the country.

Long Island has long been famous as one of the world's great suppliers of ducklings, most of these farms being concentrated in the east end. Such farms not only face the usual problems of urbanization and scarcity of labor, but also have the peculiar problems of both water and air pollution, in violation of county, state, and federal pollution control laws. It seems now as if the water pollution problem is being quickly solved through treatment of wastes,17 but most local leaders and

17 Long Island Duck Farmers Cooperative, A Study of the Pollution Control Efforts in Suffolk County, New York, as it Pertains to the Long Island Duck Industry (Eastport, L. I.: Long Island Duck Farmers Cooperative, 1966), pp. 4-6.
Researchers see an inevitable disappearance of the industry in the area in this century. Most remaining production is located near Eastport (in western Southampton and eastern Brookhaven Towns) and, to a lesser extent, near Riverhead.

The cut-flower industry is one which is growing rapidly, the county now ranking first in the state and eighth in the nation. The same figures hold true for the nursery and sod industries, and all three are rapidly expanding, primarily due to an ever-increasing market.

In all, Suffolk County ranks first in New York State and 62nd of 3,072 counties in the country in annual value of agricultural sales ($70 million in 1965).

Supplemental spray irrigation has grown rapidly on the island since the late 1930s when it was first introduced. The effect of this new development has been phenomenal, with yields per acre of potatoes, cauliflower, and many vegetables more than doubling from pre-irrigation totals. It is now common, especially in the Riverhead area, but is almost unknown in the cooler and wetter

---

18 Interview with Prof. William Urban, Director, Cornell University Duck Research Laboratory, Eastport, New York, June 1, 1967.
potato district of the Hamptons. Free, Winkelblech, and Wilson\(^19\) have observed that, despite a sufficient rate of precipitation, growing crops here frequently suffer from a lack of water, due to four factors: (1) imperfect rainfall distribution, (2) soil characteristics, (3) shallow-rooted crops, and (4) increased evaporation due to high wind velocities. While supplemental irrigation effectively takes care of the droughts, excesses in rain intensities and amounts continue to be a problem. Unfortunately, soil erosion is increased by soil removal with sod, high winds, excessive compaction, highway runoff, and by the nature of Long Island agriculture itself, namely, the growth of soil-exposing crops such as potatoes. The encouragement of farmers to use rye-grass as a supplementary cover crop seems to be one of the major present efforts to combat erosion.

Agriculture on Long Island today is becoming highly specialized and scientific, with operations tending more and more to be on a large scale, with small operations rather quickly disappearing. Not only has the value of land for housing developments and certain other uses skyrocketed, but also lack of labor, high transportation

\[^{19}\text{George Free, Carl Winkelblech, and Hugh Wilson, Soil Erosion on Long Island: Its Control (Ithaca: Cornell University, 1957)}, p. 4.\]
costs, increasing property taxes, and lack of interest in agriculture and farm-life in general have all been working against the Long Island farmer.

Efforts are currently being made by the recently formed New York State Commission for the Preservation of Agricultural Lands to preserve productive cropland in Suffolk County, operating on the presumption that most farmers in the area wish to continue in the business as long as reasonable returns can be realized. Criteria for preservation have not yet been set. Many local agricultural representatives and public officials advocate that a deferred tax and lower farm use assessment be put into operation, as this exists in New Jersey, Maryland, Oregon, and elsewhere. This would lessen financial pressure on the farm family. Many ask that more careful consideration be given to the avoidance of condemning agricultural lands for highways, a proposed jetport, and other public works on the part of state and local government.
In summary, justification for concern over disappearing agricultural lands in Suffolk County stems from the following six points:

1. Suffolk has the highest value of crop production of any county in New York.\(^{22}\)

2. Suffolk has the most diversified farm types of any New York county.

3. Suffolk enjoys a very high state and national ranking in the production of potatoes, cauliflower, strawberries, sod, ducklings, and certain other crops.

4. Suffolk is geographically the closest major crop-producing county to the great market of the New York metropolitan region.

5. Suffolk (and particularly the two South Fork towns of East Hampton and Southampton) has some of the finest quality and highest yielding potato soil in the world in the form of Bridgehampton loam.

6. Agriculture has traditionally been the economic foundation of the county, and the present native culture, especially of the eastern towns, is intimately woven into a rural agricultural pattern.

\(^{22}\)Wells, interview, \textit{loc. cit.}
Due to close proximity and easy accessibility to the metropolitan area, all of this agricultural economy is on the verge of imminent collapse, with several adverse factors moving rapidly against agriculture as a way of life here.

Land Use Change After World War II

In almost any environment on the fringes of a great metropolitan center in the United States, the chances are good that very rapid and dynamic changes in the usage of land will take place in direct proportion to the artificially spiralling increases in land values. These values increase in almost direct proportion to commuting distance from the major sources of employment within the city. Presence and degree of efficiency of rapid and reasonably inexpensive transportation connecting the home in the suburb and the place of work in the city is a secondary but necessary determinant. When given the level to gently rolling topography of Long Island, relatively pleasant climate, and location along and around numerous large bodies of salt water, and easy access to plentiful outdoor recreation, along with proximity to New York City, it is not at all surprising that western Long Island has developed in the speedy manner it has, and that, with the march of industry eastward out of New York City and into
Nassau County and western Suffolk County, the population continues to migrate farther and farther east with each passing year. It is in this light that we will look at each of the major land use categories in the east end, and the changes which they have experienced.

The three main categories of land use in the eastern towns in 1947 were (in descending order by acreage) vacant, agricultural, and urban. The same is essentially true today, with the main difference being that urban lands have increased, largely at the expense of vacant lands, and also at the expense of farm lands in certain areas.

Man's usage of interior lands in 1947 was basically agricultural (based on observation of air-photos), with much of the land of poorer soils being in an unused or vacant category, used largely (and lightly) for hunting, some fishing, and other recreational activities. The shorelines were used for duck farms, commercial fishing operations, marinas, and waterfront homes, with a fairly large percentage of land vacant.

Vacant lands are any lands not cultivated or "developed" through the presence of pavement or construction, irregardless of ownership. Lands set aside as parks and refuges, even though dedicated to a specific use, are classed as vacant, except where structures such as administrative buildings might exist.
Today, a large proportion of the formerly vacant land, primarily along and near major highways, has been taken over by residential and commercial use, the latter largely catering to the tourist and retirement industry. The most obvious locales for such intensive "highway strip" type of development has been along Route 27 (Montauk Highway) on the South Fork, and also, to a somewhat lesser extent, along Route 25 on the North Fork (see Map 5). Other arteries exhibiting development of this nature are Flanders Road (Route 24) connecting the two forks between Riverhead and Hampton Bays; Dune Road, traversing the length of the south shore barrier beach; Old Country Road (Route 58) by-passing Riverhead on the north side; North Highway, running from Hampton Bays northeast to a point beyond Southampton; and a few others. The shoreline has seen an even greater degree of development.

In studying the land use tables for each of the eastern towns in 1962 (see Tables 13-17), it can be seen that:

1. Residential land use was universally quite uniform, ranging from 2.45 per cent in Riverhead to 7.26 per cent in Southold.
2. Commercial land use was also quite uniform and occupied only very small amounts of land,
TABLE 13
SOUTHOLD LAND USE, 1962

<table>
<thead>
<tr>
<th>Type</th>
<th>Acres</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>2,069.88</td>
<td>7.26</td>
</tr>
<tr>
<td>Commercial</td>
<td>141.46</td>
<td>.50</td>
</tr>
<tr>
<td>Industrial</td>
<td>297.28</td>
<td>1.04</td>
</tr>
<tr>
<td>Institutional</td>
<td>1,038.43</td>
<td>3.64</td>
</tr>
<tr>
<td>Park and Recreation</td>
<td>544.76</td>
<td>1.91</td>
</tr>
<tr>
<td>Streets</td>
<td>1,420.78</td>
<td>4.99</td>
</tr>
<tr>
<td>Parking Lots</td>
<td>21.80</td>
<td>.08</td>
</tr>
<tr>
<td>Farms and Nurseries</td>
<td>15,993.05</td>
<td>56.10</td>
</tr>
<tr>
<td>Vacant</td>
<td>6,957.33</td>
<td>24.40</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>26.83</td>
<td>.08(+)</td>
</tr>
</tbody>
</table>

TABLE 14
SOUTHAMPTON LAND USE, 1962

<table>
<thead>
<tr>
<th>Type</th>
<th>Acres</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>3,657.96</td>
<td>3.94</td>
</tr>
<tr>
<td>Commercial</td>
<td>576.09</td>
<td>.62</td>
</tr>
<tr>
<td>Industrial</td>
<td>584.24</td>
<td>.63</td>
</tr>
<tr>
<td>Institutional</td>
<td>2,833.40</td>
<td>3.05</td>
</tr>
<tr>
<td>Park and Recreation</td>
<td>1,681.59</td>
<td>1.81</td>
</tr>
<tr>
<td>Streets</td>
<td>4,280.42</td>
<td>4.61</td>
</tr>
<tr>
<td>Parking Lots</td>
<td>49.33</td>
<td>.05</td>
</tr>
<tr>
<td>Farms and Nurseries</td>
<td>12,110.40</td>
<td>13.04</td>
</tr>
<tr>
<td>Vacant</td>
<td>67,019.87</td>
<td>72.18</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>57.90</td>
<td>.07</td>
</tr>
</tbody>
</table>

Source: Koppelman, 1962.
TABLE 15
SHELTER ISLAND LAND USE, 1962

<table>
<thead>
<tr>
<th>Type</th>
<th>Acres</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>290.05</td>
<td>4.01</td>
</tr>
<tr>
<td>Commercial</td>
<td>10.91</td>
<td>.15</td>
</tr>
<tr>
<td>Industrial</td>
<td>23.72</td>
<td>.33</td>
</tr>
<tr>
<td>Institutional</td>
<td>57.79</td>
<td>.80</td>
</tr>
<tr>
<td>Park and Recreation</td>
<td>1,785.07</td>
<td>24.68</td>
</tr>
<tr>
<td>Streets</td>
<td>425.70</td>
<td>5.89</td>
</tr>
<tr>
<td>Parking Lots</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Farms and Nurseries</td>
<td>372.36</td>
<td>5.15</td>
</tr>
<tr>
<td>Vacant</td>
<td>4,265.20</td>
<td>58.97</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1.20</td>
<td>.02</td>
</tr>
</tbody>
</table>

Land Area: 11.30 square miles (7,232.00 acres)

Source: Koppelman, 1962.
TABLE 16
RIVERHEAD LAND USE, 1962

<table>
<thead>
<tr>
<th>Type</th>
<th>Acres</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1,065.55</td>
<td>2.45(+)</td>
</tr>
<tr>
<td>Commercial</td>
<td>113.91</td>
<td>.26</td>
</tr>
<tr>
<td>Industrial</td>
<td>280.28</td>
<td>.64</td>
</tr>
<tr>
<td>Institutional</td>
<td>5,306.90</td>
<td>12.22</td>
</tr>
<tr>
<td>Park and Recreation</td>
<td>1,164.94</td>
<td>2.69</td>
</tr>
<tr>
<td>Streets</td>
<td>1,444.94</td>
<td>3.33</td>
</tr>
<tr>
<td>Parking Lots</td>
<td>19.08</td>
<td>.04</td>
</tr>
<tr>
<td>Farms and Nurseries</td>
<td>21,788.48</td>
<td>50.17</td>
</tr>
<tr>
<td>Vacant</td>
<td>12,193.83</td>
<td>28.08</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>52.49</td>
<td>.12(+)</td>
</tr>
</tbody>
</table>

Land Area: 67.86 square miles (43,430.40 acres)

Source: Koppelman, 1962.
TABLE 17
EAST HAMPTON LAND USE, 1962

<table>
<thead>
<tr>
<th>Type</th>
<th>Acres</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1,229.20</td>
<td>2.71</td>
</tr>
<tr>
<td>Commercial</td>
<td>110.21</td>
<td>.24</td>
</tr>
<tr>
<td>Industrial</td>
<td>507.34</td>
<td>1.12</td>
</tr>
<tr>
<td>Institutional</td>
<td>729.47</td>
<td>1.61</td>
</tr>
<tr>
<td>Park and Recreation</td>
<td>3,619.70</td>
<td>7.98</td>
</tr>
<tr>
<td>Streets</td>
<td>2,002.12</td>
<td>4.41</td>
</tr>
<tr>
<td>Parking Lots</td>
<td>10.28</td>
<td>.02</td>
</tr>
<tr>
<td>Farms and Nurseries</td>
<td>2,139.11</td>
<td>4.71</td>
</tr>
<tr>
<td>Vacant</td>
<td>35,010.45</td>
<td>77.13</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>30.92</td>
<td>.07</td>
</tr>
</tbody>
</table>

Source: Koppelman, 1962.
ranging from a mere .15 per cent of Shelter Island Town's land area, to an almost equally insignificant .62 per cent of Southampton's land area.

3. Industrial land use exhibits a somewhat greater variation, albeit still quite small, ranging from .33 per cent on Shelter Island (only one industrial tract—fuel storage tanks) to 1.12 per cent in East Hampton; from all indications, Riverhead, which now has only .64 per cent of its land area in this category, should grow more rapidly than the others and soon be the leader in industrialized land use (based on present zoning and the wishes of the current town administration).

4. Range in the institutional category is slightly greater, with Riverhead showing 12.22 per cent (based on a greater number of schools, churches, libraries, etc., than the other towns), and Shelter Island again bringing up the rear, with .80 per cent; the 3.05 per cent figure accorded to Southampton would include the holdings of Suffolk County comprising the new County Center on the Southampton Town side of the Peconic River near Riverhead; the 3.64 per cent figure
for Southold includes the U. S. Department of Agriculture holdings at Orient Point (mainland laboratory) and parts of Plum Island.

5. Greater variation, at least insofar as one town (Shelter Island) is concerned, is found in park and recreation lands, with this small island town having almost one-fourth of its total land area (24.68 per cent) in this category; all other towns have much smaller amounts (ranging down to only 1.81 per cent in Southampton--the town with the greatest population and hence the most critical needs for such land--and only 1.91 per cent in Southold, where needs are not as critical, due to a considerably lower absolute population).

6. Land devoted to streets does not vary greatly although, perhaps surprisingly, the highest percentage is found in Shelter Island (5.89 per cent), with (again, perhaps surprisingly) Riverhead ranking at the bottom (3.33 per cent).

7. Among the newer land use categories, especially in newly developing and rapidly growing suburban fringe areas where large shopping centers are becoming commonplace, is the use of land for parking lots; in 1962 Shelter Island had still
not experienced this development, while in all other towns this category ranked at less than one per cent (with Southold showing the highest individual percentage, at .08 per cent).

8. The next category, farms and nurseries, exhibits very great variation, as discussed later, ranging from only about 5 per cent in agriculturally poor East Hampton and inaccessible Shelter Island Towns, to slightly over 13 per cent in Southampton (almost all in the eastern area of the town between Southampton and Bridgehampton Villages), to a rather high 50.17 per cent in agriculturally rich Riverhead, and an even higher 56.10 per cent for neighboring Southold.

9. Vacant land percentages exhibit variation, although this is partially correlated to percentages of land devoted to agriculture; East Hampton easily leads in this category, having almost four-fifths of its land area (77.13 per cent) vacant (mostly a combination of large private estates and public land-holdings); Southampton has a similar amount (72.18 per cent) in this category, mostly large private estates; somewhat more than half of Shelter Island is in this group (58.97 per cent), in
private estates also; Riverhead and Southold, on the North Fork, have much smaller amounts vacant (28.08 per cent and 24.40 per cent, respectively), mainly in the wooded uplands along the Long Island Sound shore and poorly drained Peconic Bay marshes, neither of which locales are suitable for agricultural development.

10. The final group, that of miscellaneous usage, ranges from a high of .12 per cent in Riverhead, to a low of .02 per cent in Shelter Island Town.

We have now progressed through a general picture of the land use distribution in the five study area towns. The following three sub-sections illustrate the changes in each major category of land use, namely, agricultural, vacant, and urban.

Agricultural Lands

As can be seen in Table 10, farm numbers decreased so much in a few of the towns that, in order to protect the remaining farmers, towns have been combined in the reporting of statistics. This particularly applies to the towns of Shelter Island and East Hampton. About 14 per cent of Suffolk's 922 square miles of land area is
in agricultural use. Over 84 per cent of these acres are located in the eastern towns of Riverhead, Southold, Brookhaven, and Southampton.\textsuperscript{24} In 1945, the total agricultural acreage of the South Fork was a bit less than 18,000 acres. This has since dropped by about 5,000 acres. Riverhead, the great traditional bastion of agriculture, reflects similar totals and losses. Shelter Island, with 1,249 acres in 1945, has only a few hundred today, and is now combined with Southold. The latter town reports a slight acreage increase, from 14,839 to 16,520 (although the latter figure does represent a combination with Shelter Island, over 95 per cent of this acreage is in Southold).\textsuperscript{25} Farms today, though smaller in number, are considerably larger in average total acreage, averaging from 12 to 31 in percentage increase (see Table 10).

Agricultural lands, as previously mentioned, have been under tremendous pressure from outside forces for conversion to other use (namely, housing and commercial sub-division due to profits obtainable under these uses). The local farmer is not only faced with the problems of


\textsuperscript{25}Bond, \textit{loc. cit.}, p. 1.
labor scarcity and extremely high property taxes (the latter frequently aggravated by nearness to the coast), but is faced also with the great temptation of making a quick sale to a developer in return for a very large sum of cash almost immediately. The farm situation on Shelter Island is somewhat more critical than elsewhere, due to the necessity of ferry transportation to market the produce. Hence, today's production is minute, and largely consumed on the island.\textsuperscript{26}

The duckling industry has declined tremendously in shore areas in recent years, due not only to above-mentioned pressures, but also to pollution, objections of neighbors to the presence of the farms, and the great demand for the sites for marina and waterfront residential development, either of which are valued higher than any type of inland development (see Table 18). High value farm land adjoining the ocean on the South Fork, and similar waterfront lands in Southold Town adjoining Peconic Bay and Long Island Sound, are expected to experience great pressure for residential development in the near future.

Based on study of air-photos, it was found that much

\textsuperscript{26}Griffing, interview, loc. cit.
of the farm acreage which has gone out of cultivation in this period represents patch farms, isolated from the main farm blocks. These were found especially in the South Fork, in the vicinity north of East Hampton, North Haven, Hampton Bays, Quogue, Westhampton Beach, and Shelter Island. Areas where encroachment on farm blocks is becoming evident are east, north, and west of Riverhead, and also Aquebogue in Riverhead Town, suburban Southampton Village in Southampton Town, and the "highway strip" between East Hampton and Amagansett in East Hampton Town. The Town of Southold seems to be holding its own or slightly increasing in farm acreage. A major percentage of this land continues to be planted in potatoes and cauliflower, with more and more sales being made by retail roadside farm stands.

TABLE 18

TOWN OF SOUTHOLD: LAND ASSESSED VALUATION, 1967

<table>
<thead>
<tr>
<th>Lots</th>
<th>Valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Frontage</td>
<td>$20-$40</td>
</tr>
<tr>
<td>Creek Frontage</td>
<td>$40-$75</td>
</tr>
<tr>
<td>Long Island Sound Frontage</td>
<td>$75-$160</td>
</tr>
<tr>
<td>Bay Frontage</td>
<td>$100-$175</td>
</tr>
</tbody>
</table>

Source: Albertson, Lester M. (interview), Supervisor, Town of Southold, Greenport, N. Y., June 7, 1967.
Vacant Lands and Open Space

In 1947, vacant undeveloped land was widespread, being the largest single land category. Today, although much has been "developed" or "improved," it remains the largest single category. Perhaps the most obvious change apparent when one looks at maps and photos for the 1940s and 1960s is the tremendous increase in the numbers of new roads, most of which have been cut through vacant lands in order to spur development. In many cases this goal has been attained; in others, it is yet to be seen.

The towns of East Hampton and Southampton have by far the greatest percentages of vacant land (over 77 and 72 per cent, respectively), with 5 and 13 per cent, respectively, in farms.27 This is in contrast to Riverhead (with 28 per cent vacant and 50 per cent in farms), Southold (with 24 per cent vacant and 5 per cent in farms), and Shelter Island (with 59 per cent vacant and 5 per cent in farms). As can be seen by referring to Tables 13-17, the South Fork towns are similar to each other and in great contrast to those of the North Fork in this respect.

27 Koppelman, loc. cit., p. 42.
A great effort is currently being made by all levels of government to acquire as much acreage as possible of these vacant lands, especially shoreline, to satisfy the future needs in outdoor recreation and the preservation of land, water, and wildlife.

At present, four state parks (the 680-acre Wildwood in Riverhead, established in 1925; the 357-acre Orient Beach in Southold, established in 1929; the 1,755-acre Hither Hills, and the 724-acre Montauk Point parks in East Hampton, both established in 1924) exist in the five towns, as do one national wildlife refuge (the 187-acre Jessup's Neck-Morton refuge in Southampton, established in 1954, and formerly a private estate), one state wildlife refuge (Quogue in Southampton, also established in 1954), and numerous county, town, and village parks and preserves, along with other federal and state vacant lands. The Wetlands Act, recently passed by the New York legislature, has placed many more such acres of these lands into public ownership and/or control. This law provides funds for acquisition of wetlands by state and county government for preservation purposes.

Much vacant land, however, still remains in private hands: some of this will yet be acquired by public authority, some will be sub-divided for development, and some will remain indefinitely in its present status.
Large tracts are held by the Navy in Riverhead Town, the Air Force in Southampton and East Hampton Towns, and the Department of Agriculture in Southold Town (Plum Island). In addition, Grumman Aircraft Corporation, coming on the scene in the 1940s, owns a substantial tract in Riverhead Town, part of which is developed as an aircraft research facility, but much of which remains vacant (for security reasons). Of these, only Suffolk County Air Force Base at Westhampton Beach existed prior to the late 1940s.

**Urban Lands**

The old commercial fisheries villages of Greenport and Sag Harbor (birthplace of whaling in the United States), the county seat at Riverhead, largest community in the area, and neighboring Flanders, have the greatest population density among villages on the east end of Long Island. In the case of the two ports, this is purely historical, since both once had a much greater population, and vacant buildings are seen today in the central business districts of both. The case of Riverhead and nearby Flanders is a bit more recent, and probably partially due to a substantial immigration of Negroes, combined with the original white settlement.

From a study of population statistics (see Table 6), it can be seen that the faster growing communities are
Amagansett, Flanders, Southampton, Hampton Bays, and Tiana. Southampton and Riverhead each seem to be in the first stages of developing suburban districts. The remaining population centers are more stable or experiencing slight increases. Growth in Hampton Bays and Flanders is largely responsible for the high growth rate of the entire Town of Southampton. The tremendous increase of restaurants, motels, marinas, and other tourist-based establishments, indicates the phenomenal growth of this industry from nearly non-existent in the post-war period (1945-1950) to an important sector of today's modern economy. Along with this has come a considerable increase in shopping centers, supermarkets, service stations, and other similar establishments (see Table 19). The entire resort industry is restricted to the period from Memorial Day to Labor Day. However, increased population has resulted from retirement and permanent settlement of many of the former tourists, carrying over some of the prosperity through the winter. Needless to say, the construction industry has prospered greatly.

Probably the closest any of this area has yet come to metropolitan suburbanization is the dramatic recent development on the north side of Riverhead of several large new department stores and shopping center complexes. This development promises to show great growth within the
### Table 19

NEW CONSTRUCTION IN THE TOWN OF SOUTHOLD, 1957-1966

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>One-family Houses</td>
<td>73</td>
<td>141</td>
<td>166</td>
<td>145</td>
<td>165</td>
<td>136</td>
<td>157</td>
<td>171</td>
<td>180</td>
<td>165</td>
</tr>
<tr>
<td>Motels</td>
<td>---</td>
<td>1</td>
<td>---</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>---</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Gas Stations</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Stores</td>
<td>1</td>
<td>1</td>
<td>---</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>2</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>2</td>
<td>---</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Southold Town Supervisor, 1967.
next few years as land for expansion is available and a rapidly growing market is present. Much of this new suburban development is taking place on unincorporated land near incorporated villages, since zoning ordinances have traditionally been less strict outside of villages. This subject will be further explored in the next chapter.

It can easily be seen that the five eastern towns of Suffolk County, New York, are, even today, one of the most dynamic and rapidly growing areas in the United States. It seems clear that the greatest land use change thus far has occurred mainly on previously vacant land, on important rights-of-way, and also on the bay-front shorelines. Nearshore interior sections follow closely in degree of change. It is apparent that farms which are within or close to villages, and also those near the major highways, have experienced the greatest rate of mortality. However, encroachment on less accessible farms is now beginning, along with the rapid expansion of urban areas.28

28 Little land use work has been done until quite recently, and no land use statistics exist for these towns for any year prior to 1962. All statements are based on a study of air-photos, along with recognition of changing population statistics.
Conclusion

Having thus established that absolute population has risen substantially in the study area, and that population has dramatically spiralled upward in the area immediately to the west, with a foreboding of a similar spectacular increase in the eastern towns, we might also conclude that: (1) agriculture has traditionally been the lifeblood of the local economy, although its role and relative economic value are now being replaced by the tourist dollar; and (2) that three major categories of land use have traditionally existed in the area, and continue to exist today, although in changing proportions.

Due to the rapidly increasing population and, perhaps more importantly, spiralling land values and lack of governmental control (planning, zoning, etc.) in the past, changes in land use and development up to the present time have been very haphazard and unplanned. The recent introduction of land-planning programs, and the presence on the scene of new governmental planning organs, should aid this situation somewhat. The next chapter will examine the role of professional planning and planning philosophy in this area. Attention will now be devoted to the controls of change.
CHAPTER III

LAND PLANNING IN THE LIGHT OF FUTURE
SOCIO-ECONOMIC CHANGES

The recent interest in land use planning, whether in urban, suburban, or rural areas, stems directly from the post-World War II population explosion, and exemplifies a national desire for more quality in the pattern and arrangement of man's environment, as well as a desire to curb certain health and economic hazards in that same environment. A particular problem faced by Suffolk County residents and planners is the ever-increasing trend of "diminishing densities of residential land usage" and the resulting development of large tracts of land scattered across the island.¹ Dominating this plan is the concept of "one acre of land for each family."²

The lack of regard for land development with respect to the local topography, drainage, water supply,


and aesthetics has led to serious problems of insufficient water supply, contamination of the water resource through detergents, sewage effluent, salt water intrusion, and other pollutants, poor drainage and flooding conditions, pollution of the atmosphere, uneconomic use of public services (e.g., highways, electric utilities), and destruction of the very rural qualities which originally served as an attractant to people to move into the area. Such problems, in turn, have led directly to the slowdown of suburban sprawl through zoning and the proposal of new and imaginative planning solutions (cluster zoning, new towns, green belts).

Planning for open space has become necessary to provide lands for outdoor recreation (with needs increasing rapidly due to increased leisure time, greater mobility, higher per capita income), for ecological reasons such as preservation of watersheds for an adequate pure water supply, cleaner air, fauna and flora preservation for scientific as well as recreation and other purposes, along with general aesthetic reasons. Lewis Mumford largely sums up justification for the inclusion of open space in any regional land planning scheme:

The rhythm of the seasons disappears, or rather, it is no longer associated with natural events, except in print. Millions of people grow up in this metropolitan milieu who know no other
environment than the city streets: people to whom the magic of life is represented, not that of miracles of birth and growth, but by placing a coin in a slot and drawing out a piece of candy or a prize. This divorce from nature has serious physiological dangers that the utmost scruples of medical care scarcely rectifies. For all its boast of medical research, for all its real triumphs in lessening the incidence of disease and prolonging life, the city must bide to the countryside in the essentials of health: almost universally the expectation of life is greater in the latter and the effect of deteriorative diseases is less.\(^3\)

In open space land planning design, the relationship between open space and industry (including agriculture) and that between open space and taxation must be explored.\(^4\) In this connection, it should be noted that, on Long Island as a whole, the lands consumed by residential housing development are almost always the prime agricultural lands, with the idle and agriculturally useless pine barrens and uplands only secondarily developed. Good planning dictates that the highly productive arable acres be preserved in cultivation, while attention be given to developing the previously idle lands. Concerning taxation, Koppelman reminds us of the numerous complaints registered against land withdrawal for public purposes,


due to the apparent deleterious effect on the local tax base. There are two main arguments against this claim:

1. Land removed for public purposes cannot be residentially developed, meaning less expense to the town for public utilities, highways, schools, etc.

2. Land adjoining acreage removed for public parks and other open space normally experience increased assessed valuation due to proximity to open land—this is especially true in suburban and rural fringe areas such as eastern Suffolk County.

One final advantage of land use planning, and particularly open space planning, is the preservation of a certain political and cultural identity for each community and sub-region of the area. This is accomplished by both agricultural land preservation and the "green belt" concept of public land acquisition. Overlapping of communities and former sub-regions is an especially serious problem in fringe areas suffering from spreading urban sprawl, such as Long Island, and leads to not only many political and economic difficulties, but also to a loss of cultural identity and community spirit.\(^5\)

\(^5\)Ibid., p. 11.
Hence, there are numerous proven and accepted reasons to justify the need for open space planning. However, planning does encounter some degree of opposition, especially in eastern Suffolk County, since there are some people who are reluctant to accept the idea of planned development. Legal authority for planning is present in the laws of the State of New York; problems arise in persuading planning bodies to accept and use this authority.

The expressed purpose of the State of New York in authorizing planning by local governmental or quasi-governmental bodies is to "bring into focus the ideas and desires of [the state's] citizens and formulate programs that will encourage and maintain a satisfactory living environment." In the same vein, the state suggests the use of tools such as base and numerous other maps, zoning ordinances, building codes, subdivision controls, and others.

While the use of zoning, the most important local planning tool, is normally restricted to towns and their planning boards, the influence of county planning commissions is by no means absent, and such commissions

---

make major (in many cases the most significant) contributions, especially in the areas of: (1) conducting initial regional planning studies of the county, and constructing detailed maps from these studies; (2) integrating and coordinating the work of the several town and village planning boards; and (3) providing technical assistance to town and village boards, both in terms of providing professionally educated planning personnel as advisors, and providing training for members of town and village boards, most of whose members lack any professional education in this field.

A special need in Suffolk County is for strict subdivision regulation and control, and improved planning of such residential developments. Need for such regulation is justified by the effect of subdivisions on the traffic pattern of surrounding arteries; storm water drainage and runoff from the area; need for additional water supply and sewerage disposal facilities; and need for several categories of increased public service.\(^7\) The state has delegated authority for such control to legislative bodies of cities, towns, and villages, who, in turn, may delegate it to the officially-designated

\(^7\)New York, Commerce Department, Control of Land Subdivision (Albany: New York Department of Commerce, 1963), pp. 7-8.
local planning board. In all cases, the planning board serves in an advisory capacity only, with the elected legislators making the final decisions.

The original motives directing the environmental change-over from rural to suburban seem to be largely economic, and frequently begin when the large landholder (whether he be farmer, forester, or whatnot) realizes that his land has a much higher dollar value per acre when sold for residential development than when sold for continued open space development. Eventually, larger and larger tracts are subdivided into smaller and smaller plots, until virtually all available private land has been "developed," either in residential or service industry development. During the course of this transition, landed interests (especially farmers) encounter numerous problems with rapidly rising tax assessments, conflicts of interest with non-landed neighbors, etc. This can eventually destroy landed interests.

Although there are many tools which government planners have to ease the pressures during this transitory period, undoubtedly the most effective in use today is zoning. There are four different techniques of zoning which are especially useful in rural or urban fringe areas: ⁸

---

⁸ Erling Solberg, *The Why and How of Rural Zoning*
1. Land use zoning, the most commonly conceived type.
2. Building tract regulations, which deal with the placement of structures on tracts of land.
3. Height and size restrictions.

Rural zoning might be defined, then, as the "division of the community, by means of local laws called zoning ordinances, into suitable kinds of districts or zones for agriculture, residences, business, forestry, and so on." Local laws may then be applied in each district to enact and put into operation the different zoning techniques.

Although the ordinances are exercised by local units of government (in New York State by the towns), authority for such ordinances is derived from the police power of the state (i.e., that broad power to safeguard and promote public health, safety, morals, or the general welfare). The actual authority is delegated from the state's legislative body to the town's legislative body (in the case of Suffolk County, the Town Board). In addition, authority to zone must be used uniformly throughout the jurisdiction of the town government, and may apply


9Ibid., p. 2.
only to future land use. (Pre-ordinance uses, even if nonconforming as far as the new ordinances is concerned, are said to have a "vested interest, and may remain.")¹⁰

It is inherent in the philosophy of zoning that said zoning be carried out in conjunction with a fully developed master plan for the community, with essential purposes of such zoning being to: (1) avoid undue concentration of population, (2) lessen congestion and traffic hazards, (3) foster agriculture and other open space land uses, (4) conserve the tax base, and, in general, (5) encourage the most wise use and protection of soil and water, while promoting the public health and well-being. There are many other specific goals, too numerous to mention.

Zoning tools may be put to especially good use in solving urban-agricultural conflicts in these "fringe" areas. Some objectives of zoning farm lands would be to:

1. prevent scattered suburban growth across the landscape,
2. secure governmental economies,
3. avoid restricting agriculture because of conflicts,
4. prevent an excessively high tax burden from

¹⁰Ibid., p. 3.
being placed on the farmer,

5. prevent "fringe" areas from becoming dumping grounds for undesirable land uses, 

6. keep productive farm areas in agriculture,

7. reserve fertile soils for farming, and

8. protect the economic base of local agricultural operations.

Agricultural interests have perhaps more to gain than others from the efficient use of available zoning tools.

A relatively new development in land use planning is the technique known as cluster development or cluster planning.\textsuperscript{11} The use of the cluster concept not only does not abrogate the basic concept of zoning, but actually enhances it. It is a higher form of the zoning tool.

Essentially, cluster planning entails the down-zoning of a particular tract of land, either in town or on a specially designated area (which is known to be able

\textsuperscript{11}Cluster zoning may be defined as deliberately down-zoning a particular tract of land to enable the greatest population density desirable on that tract, while at the same time designating an adjacent tract to remain forever undeveloped, as public land, or, in some cases, land under the administration of a private conservation organization, such as the Nature Conservancy. Various ratios and formulas may be worked out by zoning boards to determine how much land may be placed in each category, and also the maximum density of settlement allowable on the developed tract.
to physically and economically support a relatively high density population), in order to control the distribution of population density. At the same time, large tracts of open space land are acquired by some level of government or a private organization in order to fulfill specific purposes (i.e., provide a fresh water supply, provide land for outdoor recreation, serve as a buffer zone or "green belt" between communities, etc.). The primary result of cluster planning, then, is the prevention of scattered (and wasteful) settlement across the landscape, or "urban sprawl."\(^{12}\)

Statewide enabling legislation is not necessary to develop cluster planning, since it is consistent with presently existing zoning law in New York State. However, in 1963 the legislature passed a cluster enabling act "in order to give statutory recognition to the public purposes served and to outline the general requirements for the administration of a local ordinance."\(^{13}\) The act shows essentially that: (1) clustering is permissive—no submittal of a plan is required, (2) density conformance is provided for, and (3) flexibility is provided in


\(^{13}\)Ibid., p. 79.
the maintenance of open space in that ownership is not limited to the municipality itself, but protection is provided for. The viewpoints of local government officials vary considerably on this comparatively new planning concept. These are outlined later in this chapter.

All of these and many related problems are discussed by noted forest ecologist and resource conservationist, Lawrence S. Hamilton, of Cornell University. In a plea to "minimize ecological risk" in natural resource and land use planning, and to make certain that resource specialists play a significant (and necessary) role in land use planning at the urban fringe, Professor Hamilton states:14

Too drastic a warping of a natural ecosystem may have immediate or delayed, albeit serious, repercussions which make maintenance of the new use overly expensive, or even impossible (as is the case with soil slipping, flash flooding, etc.). If we simplify our new urban ecosystem by replacing natural diversity with dense settlement we shall not only reap drabness but also run risks which overly simplified systems are prone to incur. If we do not have an awareness of the natural resource potential of the landscape, unplanned or ill-planned occupancy can abort a resource conversion enterprise which would be in the public interest.

Those trained to understand and manage the land and

water resources, and are aware of their inter­relationships, can play a role in identifying resource potentials, in minimizing undesirable ecological consequences and enhancing pleasant and stable settlement and commerce. In this process the landscape becomes more than a commodity to be converted into material welfare for predatory man. Planning and management of the earth becomes more biocentric, in the interest of more abundant life.

Hence, cognizance of basic natural resource conser­vation principles by the members of professional planning agencies, and, even more so, by the usually very non­professional town planning and zoning boards, is very necessary.

There is currently great interest on the part of local government to seek to influence the trend in future land use on Long Island, and especially in Suffolk County. Most of the pressures in this direction seem to be exter­nal, emanating from forces off the island. However, at long last, internal pressure from a government-established group of professional planners (the Bi-County Planning Agency), along with a small number of irate (and, fortunately, influential) private citizens, is finally making itself known. Among these pressures would be included:

1. pressure from federal and especially from New York State government to place more and more acreage in public ownership in the 100 to 200 mile area surrounding New York City (including all of Long Island) for purposes of future
outdoor recreation use and preservation. Most of this land is being purchased outright by state and county government, while a lesser amount is being set aside by federal, town, village, and nature conservancy groups;

2. over-exploitation of ground water supply, aggravated by the current drought and fear of salt water intrusion, has spurred the local citizenry to demand that measures be taken to set aside wildlands and lower the rate of population increase;

3. demand by the federal government for wetlands acquisition to halt the decline of waterfowl in the Atlantic Flyway, and also to protect valuable shellfish beds and fish nursery areas; and,

4. finally, perhaps most of all, a desire by regional planners to permanently set aside "green belts" in the implementation of their plans for "cluster development," and the movement to up-zone by town planning boards to curb the rapid scattering of close settlement across the landscape.

During the course of carrying out research for this thesis, several public officials, including all five town supervisors and the county executive, several farmers,
and one power company executive were interviewed for their positions on this subject. One group, including all five supervisors, and most natives of the east end, tends to oppose the regional planners, and support a comprehensive system of up-zoning all remaining open land. The other group, including the professional planners and the county government, decry up-zoning and feel that with it there is no possible way of stopping the tremendous population increase and development that is coming. The latter group supports "cluster planning," with liberal amounts of acreage in green belts and parks. As part of this county plan, it is believed that about 50,000 of the present 73,000 acres of cultivated farmland should be kept in indefinite production, 39,000 of which would be located in four eastern towns (excluding Shelter Island), plus 11,000 additional acres to the west in Brookhaven Town.\footnote{Koppelman, loc. cit., p. 73.}

The Town of Southampton, largest and fastest growing town in the east, has been faced with the most critical land use problem. As a result of citizen demands, the town planning board recently drew up a new interim up-zoning plan, to be used while awaiting the completion of
the new town master plan. The original plan ranged from AA (80,000 square feet required to build a structure), A (40,000 sq. ft.), B (25,000 sq. ft.), C (15,000 sq. ft.), D (10,000 sq. ft.), E (20,000 sq. ft.-business), F (2,500 sq. ft.-business), to G (20,000 sq. ft.-industrial). The AA category was deleted in final passage due to protest from real estate interests. However, by far the greatest acreage of this up-zoning plan is in the A category, quite a change from land which was under almost no zoning restriction only ten years ago. The greatest drawback to this system is the number of exceptions and variances granted almost on request to certain individuals.

In East Hampton, a new zoning ordinance was enacted although the AA (in this case, 12 acres) was retained, with the result being, in general, a higher degree of up-zoning than in Southampton. As the town supervisor pointed out in an interview, this not only has the effect of curbing the number of people who can settle in the town, but also selectively chooses only the wealthy, since, with a large amount of high-value land required for any construction, all low-income, and most of the

middle-income families could not afford settling there. 17

Shelter Island Town felt the need for a zoning ordinance and passed its earliest in 1957. No real upzoning has occurred since. Only three categories are included: (A) shoreline and near-shore or water-view residential, (B) business, and (C) interior residential. The pattern here tends to be essentially A for the immediate shoreline (waterfront property), most of the numerous small peninsulas, and some land somewhat removed from the immediate shore, but which provides a water-view; C in the interior; with B restricted to the borders of the one major highway crossing the island. Intensive settlement problems do not as yet exist in this town, largely due to inaccessibility.

The prime differences seen in the zoning plan for Riverhead Town are the huge areas designated for industry in the western part of the town, the large agricultural area to the north and east, and the large commercial sections within and immediately north of the village of Riverhead. In addition, the most extensive multiple-unit dwellings ("garden apartments") in eastern Suffolk are located on the eastern side of the village.

Southold Town is in the process of drawing up a new zoning plan, and no information is currently available. However, the town has thus far been under little pressure from development.

Currently, following the path of the western towns, the east end towns have contracted planners and engineers to draw up comprehensive land use master plans. Shelter Island is the only exception to this. Riverhead became the first to complete her two-volume plan (1964), while East Hampton recently completed her first volume (1966). Southold's is nearing completion (early 1968), while Southampton's should follow (1969).

A poll was taken of the five supervisors of the eastern towns and the county executive to obtain their opinions on certain crucial matters affecting land use and the natural resource base in the future. The results of that poll follow.

East Hampton:

The supervisor of this easternmost town feels that the town should maintain its three agricultural areas in their present entirety, possibly through the use of a lower tax assessment on agricultural land; however, he

---

18 Interview with H. Lee Dennison, County Executive of Suffolk County, County Center, Riverhead, New York, June 15, 1967.
opposes the "locking up" of land in agriculture through zoning, as this would deprive the farmer of his right to make a profit through the sale of his land for non-agricultural uses, such as subdivisions.

The town is actively attempting to develop a large new industrial park in the vicinity of the town-owned airport (the only such "park" east of Riverhead on either fork), and to maintain current industrial sites in Sag Harbor and Napeague. The feeling here is that the town will develop much more but, due to recent up-zoning, subdivision development will not be intensive. In this connection, the town is encouraging large landowners to dispose of their lands piecemeal rather than in bulk, thus discouraging immediate large-scale development by speculators.

The future economy is largely planned on a base of tourism and resort-retirement industry, with some agriculture, light industry, and a much up-graded commercial fisheries output, especially in the area of shellfisheries.19

Southampton:

Local government here is undecided on the promotion of light industry, as a comprehensive master plan is  

19Collins, interview, loc. cit. 

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
being awaited. Again, "tax concessions" for agriculture and heavy dependence on a resort and retirement economy are encouraged. Commercial fisheries has recently increased in production, especially with the recent increase in local lobster catches and retail sales of fish and shellfish to tourists.

Recent interim up-zoning and a water controversy have stalled residential development somewhat, but there is some feeling that, while zoning may be an answer today, it may not be an answer for tomorrow, especially in the light of changing powers in local government. No future is seen for the great but steadily declining duck industry in the town.21

Riverhead:

This town is expending the most effort to attract more solid light industry, in addition to already extensive industry in the west. However, the town hopes to exercise great discretion in the type of industry coming in. The town is also working hard to protect its

20 A recent test water-well dug in East Quogue showed salt water to be much nearer the surface than originally supposed, indicating the presence of a much smaller freshwater supply than was previously thought to be the case.

21 Interview with Robert Cameron, Supervisor, Town of Southampton, Town Hall, Southampton, New York, June 8, 1967.
extensive agricultural economy, and is encouraging the state to lower tax assessment on farmland. A local committee has been organized for this purpose. This town has no commercial fisheries, and much less resort and tourist activity than the other four; however, much of the latter overflows from surrounding towns, and, hence, economic gains are evident. The town also believes in a policy of up-zoning, and was the first to complete a master plan. Riverhead is making less effort than the other towns to acquire lands for recreation and other similar usage, since there is a feeling that too much land in the town has already been removed from the tax rolls (the recent acquisition of land to supplement the Grangebel Park project in the village of Riverhead is an exception to this).  

Southold:

This town, while encouraging light industry, is making its greatest effort in preserving, and even expanding to some extent, its farm acreage and production. Southold is the most dependent on agriculture of the eastern towns. Being also the leader in commercial fisheries, local officials feel that, through increased

research in marine biology and ecology, this industry will experience a solid come-back. While reliance is also placed on zoning here (at least in theory if not always in practice), the need for up-zoning has not been as critical as elsewhere.23

Shelter Island:

This very small insular town has no light industry, no commercial fishing operations, and no longer any agriculture exporting produce from the island. Total reliance has been placed on up-zoning, and a constant battle is being waged to prevent the construction of bridges, in order to prevent over-development. No land use plan has been or is being drawn up. The island's economy is completely resort and retirement, and, according to local public officials, will remain so in the future.24

The official viewpoint of Suffolk County differs from that of the eastern towns mainly in the area of zoning and land use planning. The county is firmly

23 Interview with Lester Albertson, Supervisor, Town of Southold, Village Hall, Greenport, New York, June 7, 1967.

committed to a policy of cluster zoning and cluster planning in the east, with the down-zoning of tracts surrounding villages to allow for a higher-density population, counter-balanced by government acquisition of large tracts of land outside of villages to serve as "green belts" or "green spans" dividing the villages, as well as watershed conservation and outdoor recreation areas. The county argues against the supervisors' policy of up-zoning as being too temporary and leading to a false sense of security in believing that an expanding population and development can actually be stopped. In addition, the towns are not felt to be encouraging enough land acquisition for outdoor recreation or watershed protection.

Because of these and certain political differences, there is a current movement by certain public officials in the east end to secede the five towns from Suffolk County and form a new county. This idea is largely occasioned by the political reality of the loss of east end voting strength on the Board of Supervisors due to lack


26 Dennison, interview, loc. cit.
of population (in comparison to the five western towns), and was caused by a recent Supreme Court reapportionment decision. The pros and cons are as follows:

Proponents of division argue that:

1. The eastern and western towns are basically different, with the east described as largely rural, deriving most of its income from tourism and agriculture, while the west is more urbanized and industrialized.

2. Each has different aims and objectives.

3. The east does not want to be as populous or industrialized as the west, and feels it can operate more economically.

4. The east claims to have lost real representation on the Board of Supervisors, and, hence, a political role in the county.

5. Political subordination to the west has and will continue to result in taxation without representation.

Those opposed to county division argue the following:

1. The east cannot afford separation because of the obligation to pay existing bonded debt.

---

2. Population expansion and industrialization are inevitable in the east.

3. Continuance as a single county would help avoid absorption into metropolitan New York.

4. Reapportionment is long overdue, and it is only fair that the population of the western towns be truly represented on the Board of Supervisors.

5. The west is not interested in political domination over the east.

The effect of such political separation on future land use patterns in the eastern towns would probably be minimal, although at least one town supervisor feels otherwise, since (he feels) the powers of county and town government (presumably regarding zoning and related town matters) may be vastly changed by the state legislature in the near future. Although the recently proposed new New York State Constitution, containing some changes affecting local government, was defeated at the polls, many of the provisions will be decided upon by the delegates to the legislature, or in future separate balloting by the electorate. Such changes which are to occur should be known in a short time.

---

28 Cameron, interview, loc. cit.
No discussion of the future outlook of the five towns of eastern Long Island would be complete if it ignored the current and rather serious debate being waged over the availability of a pure fresh water supply for future populations. The debate has centered mainly on the South Fork, and is closely connected with both land use and zoning.

Essentially the problem grows from the fact that no point in any of these towns is more than a few miles distant from salt water. Since the sole source of fresh water for man's use on Long Island is ground water, and since the sole supply of this ground water is derived from precipitation (well below normal averages in recent years), the problem increases in direct proportion to increasing population. This situation is greatly aggravated when it is realized that the majority of the population lives on or very close to the shore. Saline water has thus far polluted virtually the entire aquifers of Kings (Brooklyn), Queens, and western Nassau Counties, and a line of ocean water is moving eastward on a broad front at a rate of about 100 feet per year.29 Increased settlement, with additional paved areas, sewer systems,

etc., continues to complicate the problem as population numbers and density increases. Non-degradable detergent filtration from private cesspools has added contamination to the already-depleted ground water aquifers.

Fear of salt water encroachment and depletion of the fresh water supplies has spurred up-zoning and land preservation on the east end (as witness the interim and extensive up-zoning project in the Town of Southampton). According to Hendrickson, Riverhead, Greenport, and Montauk are already beginning to have serious problems; most other coastal areas cannot be far behind. In a recent publication of the U. S. Geological Survey, it was shown that depletion of the ground water aquifers and intrusion of salt water into these aquifers as a replacement has occurred historically with the gradual migration of population eastward. Extreme impairment of the quality of locally available fresh water, from sea water intrusion or any other source, would have a total effect on land use and development, bringing all to a

---


halt, and possibly reversing all trends, since, aside from expensive desalinization and piping arrangements, there are no other water sources available. On the other hand, should a new deeper-lying aquifer be discovered, as some suggest, development of vacant land would probably increase at an even faster pace. For the present, however, it is assumed that the supply is quite limited and, hence, tighter controls on development are forecast for the future.

One of the following two alternatives seems to be part of the future of these five old eastern towns:

1. If the conservationists, farmers, and others are correct, severe water problems (both from pollution of the existing supply, and lack of a sufficient fresh water supply) will set in, prohibiting any future development, and possibly reversing the current trend to some extent, due to a simple lack of cheap, potable water.

2. If the professional planners and developers are correct, much, if not all, of the east end will probably be completely developed as a "bedroom"

---

of the metropolitan area in this century, following the examples of Nassau and western Suffolk Counties, with most residents being employed in western Suffolk towns, Nassau, and New York City. This is the trend as it exists at present.

Only time will tell. According to those numbering themselves among the conservationists, the time is not far off.
CHAPTER IV
CONCLUSION

Suffolk County, Long Island, has been experiencing a population growth rate which is considerably greater than that of the state or nation. This rapid increase of population is due largely to migration from heavily populated counties to the west (i.e., Nassau and the boroughs of New York City), and is having a profound effect in altering land utilization and the very way of life to be found in the county. The effect thus far has been felt mainly in the five west end towns, with the greatest potential for change to be found in the five east end towns, the latter of which make up the study area for this thesis.

Long Island is basically glacial in geomorphic origin, being based on two lengthy terminal moraines, one in the center serving as a "backbone" (Ronkonkoma), and one more recent along the north (Long Island Sound) shore (Harbor Hill). The island slopes gently north to south, with much of the land area (and a large proportion of the population) being located on the southerly outwash plain. In the western and central areas, the two moraines are separated by the interglacial plateau,
while in the east they are divided by the waters of Peconic and Gardiners Bays, broken in places by islands. The south shore (Atlantic Ocean) is under the currently active influence of marine erosion and deposition, being characterized by a depositional barrier beach most of its length, with the exception of the eastern area which suffers from wind and wave erosion. Surface drainage is uncommon, due to the porous nature of the soil, and the Peconic River is the only stream of any significance in the study area. The island experiences a rather mild climate for its latitude, since all parts are vulnerable to the moderating influence of the sea. Due to its position along the Atlantic coast, the island (and especially the east end) is particularly open to both hurricanes and severe winter storms. The eastern area contains relatively few soil types, and these may be rather easily divided into the loamy agriculturally productive types (Sassafras, Bridgehampton), and the corresponding sandy or clayey unproductive upland types (Plymouth-Haven, Greenport clay). Among the productive types, Bridgehampton, associated mostly with the South Fork, is considered one of the most productive soils in the world for potato agriculture. Sassafras soils are most common on the North Fork, while unproductive Plymouth-Haven types are associated with glacial morainic
deposits, and are also common to all the islands. Greenport clay is quite rare, while economically useless sands are associated with the immediate shoreline, especially on the South Fork. Of the differing groups of natural vegetation associations to be encountered in the eastern towns, the very homogeneous pitch pine-scrub oak association must be considered dominant from the point of view of land area and acreage supporting this type.

Other significant associations would include the mixed hardwood forests restricted to morainal ridges on both forks, and saline wetlands, found in greatest acreage bordering south shore bays and estuaries, but common to all shorelines, including the "interior" Peconic-Gardiners Bay system. There are at least three other minor associations which may be distinctly defined. Much of the faunal species common to eastern Long Island are associated in some way with the marine environment, or the littoral zone and wetlands.

The human settlement patterns very much reflect previously established coastal New England patterns; indeed, the five eastern towns were directly or indirectly settled from the Massachusetts Bay Colony during the mid-17th century. Riverhead grew to become the political and financial center of the eastern half of the island, while Greenport and Sag Harbor early played a maritime role,
leaving the pastoral and agrarian position to the south shore communities of East Hampton and Southampton, and the North Fork shire village of Southold. The degree of correlation between soil type and human settlement patterns, with resultant land utilization, is great, with productive agriculture being rather restricted to Bridgehampton and Sassafras soils areas, less intensive land use on the remaining types. There is also an obvious correlation between crop type and soil type in the farming districts.

The economic picture differs quite a bit on the two major forks of the east end. The more northerly of these two forks is dependent on the primary sector of the economy, namely, crop agriculture (potatoes, cauliflower, strawberries), and commercial fisheries operations out of Greenport. Most activities focus on one mainline east-west thoroughfare (Rte. 25). On the other hand, the South Fork is much more heavily dependent on summer tourist activities, being located along the ocean, and not having as great a proportion of its land area suited to crop agriculture. Although commercial fisheries are still important, there is no one center equivalent in rank to Greenport. Shelter Island, between the two forks, is also dependent on resort industry. Due to a greater percentage of vacant land in the southern towns,
population growth and land use change have been greater here than elsewhere.

From an agricultural standpoint, Suffolk County has been surprisingly important in many respects to both the state and the nation. Traditionally, fame has come to the county's farming efforts through a trilogy of sorts: potatoes, cauliflower, and ducks. Having extremely fine soils, a relatively long growing season, and a ready, easily accessible, nearby market for both potatoes and cauliflower, the island has for many years ranked at or near the top in the national production of both. Potato production is divided between the high-yield Bridgehampton district on the South Fork, and the lower-yield Riverhead-Southold district on the North Fork. The production of cauliflower is fairly limited to the latter district. The presence of the duck industry is the result of both an historical accident and the availability of suitable bodies of water (salt water inlets) to support the industry; as a result, the eastern end of Long Island is the center of the national industry and also a world center, supplying 75 per cent of the total United States output. However, this specialized industry is almost certainly doomed to virtual extinction in the near future, due not only to the usual problems of encroaching urbanization, but also because of the pollution of water
and air. Eastern Suffolk has attained fame in the production of certain other field crops as well, notably strawberries, cabbage, and sod, but is perhaps becoming most important as a center for diversified truck farming operations, mainly due to its close proximity to the large metropolitan market. Spray irrigation, used to supplement precipitation, has alleviated risk of drought, and has done much to increase production in the years since World War II. Statistically, the county ranks quite high in a number of important output and especially gross value categories, with most of this coming from the eastern towns.

There is a relatively new interest on the part of many Americans to seek to exert some control over the course of future land use. This recent phenomenon of professional planning has certainly not been absent from the Long Island scene, and is especially prominent at the county level. Reasons to justify government expenditures in the area of planning are numerous, and are especially urgent in any area exhibiting the very high growth rates of Suffolk County. Zoning has been the basic tool of planning in the county, and is always used at the town or village level, under the advisement of the county planning agency.

Following World War II, a large proportion of the
land area of the five eastern towns was classified as unused or vacant, followed in order of decreasing acreage by agricultural lands, and lands dedicated to urban uses. The order is the same today, although the urban category has increased at the expense of the vacant category in many areas. Residential use has been especially intensive, followed by retail commercial developments, the latter mainly along major arteries. Waterfront lands have been particularly vulnerable to urbanization, as have those near the major highways. Land use change has been considerably more rapid on the South Fork, due to the existence of greater tracts of vacant land and a more rapidly increasing population, and slower on the North Fork, due to a greater percentage of somewhat more stable agricultural acreage. Change has probably been slowest on Shelter Island, almost certainly due to relative inaccessibility. There is at present an active government effort (at all levels) to acquire as much acreage as possible in the vacant category in order to meet burgeoning future demands for land for outdoor recreation, as well as the protection of the ground-water supply. There is some evidence that at least two of the population centers (Riverhead and Southampton) are becoming sufficiently large enough to support distinct suburban districts on their outer fringes. These are growing along highway
by-passes, and feature the first shopping centers, a typical characteristic of suburbia, on the east end.

Reasons to justify government's interest in influencing the trend in land use are numerous and well established. In many cases, for example, in water management and supply, governmental action is of necessity. In eastern Suffolk, opinion is divided between those who support comprehensive cluster planning and zoning (together with public land acquisition), (i.e., professional planners and Suffolk County government), and those who support a policy of up-zoning large tracts of land (i.e., town government and many local citizens). Up-zoning ordinances have been passed by each of the five eastern towns. In addition, comprehensive land use master plans have been or are being contracted for by each of these towns, with the exception of Shelter Island. A poll was taken of the supervisors of the five eastern towns and the county executive, and each of their varying and diverging viewpoints are recorded.

Much of the recent controversy concerning zoning ordinances and land use planning stems from uncertainty as to the extent of the fresh water supply available from the ground water aquifer underlying the two eastern forks. Some say the eastern towns can support a much greater population than they contain at present, while
others argue that salt water intrusion into the aquifer is occurring at an alarming rate, due to overly rapid exploitation of the available ground water. The latter viewpoint has definitely spurred widespread and rapid up-zoning of sizeable tracts of terrain, especially in the Town of Southampton.

At the present time, there is much debate as to the merits of seceding the five eastern towns from Suffolk County and forming a new county, primarily due to the very great differences in population, economy, and society existing today in the two ends of Suffolk. The purpose of such secession would be to bring to the east end a greater amount of political control over its future. The opponents' main argument is that the east end will be much like the west end in all human aspects in the not too distant future, regardless of secession. Any possible future effects on land use change in the five eastern towns would probably be quite minimal.
BIBLIOGRAPHY

Books


Public Documents

Bond, M. C. *Suffolk County Agriculture and Land Use, 1875-1947*. Ithaca: Department of Agricultural Economics, Cornell University, 1947, 14 pages.


Fugitive Materials


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
(Anon.)


Correspondence and Interviews


Cameron, Robert T., interview. Supervisor, Town of Southampton, Southampton, N. Y., June 8, 1967.


Dallyn, Prof. Stewart, interview. Director, Long Island Vegetable Research Farm of Cornell University, Riverhead, N. Y., May 24, 1967.

Dennison, H. Lee, interview. County Executive of Suffolk County, County Center, Riverhead, N. Y., June 15, 1967.


Urban, Prof. William, interview. Director, Cornell University Duck Research Laboratory, Eastport, N. Y., June 1, 1967.

