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Economic and Housing Survey of the Orlando Metropolitan Region: A Report to the Orlando Board of Realtors

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ECONOMIC AND HOUSING SURVEY OF THE ORLANDO METROPOLITAN REGION

A REPORT TO THE ORLANDO BOARD OF REALTORS

By

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NEW YORK CITY

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Preface

The vital importance of anaylzing the economic base of an urban region in order to determine the size of its future population and the extent of its demand for new housing has recently been widely recognized. The technique for measuring the economic background of cities which I devised while Principal Housing Economist of the Federal Housing Administration and which was used in rating all the cities and towns where the FHA insured mortgages, has also been recently adopted by the planning commissions of the largest American cities as a basis for estimating the size of their future population. As Director of Research of the Chicago Plan Commission and as Director of Economic Studies of the Regional Plan Association of New York I prepared published surveys analyzing the trends of industry and trade in those metropolitan areas. Fundamental economic studies have also been made by the plan commissions of Philadelphia, Detroit, Cincinnati, Kansas City and other cities.

While government agencies and planning commissions have thus prepared economic background surveys, this is the first time, to my knowledge, that a Board of Realtors has taken the initiative in sponsoring and financing a basic study of the economic forces governing the future population growth and the housing demand of an entire metropolitan region.

Fortunately the study of the economic base of Orlando presented an extraordinary opportunity for surveying in detail the resources and prospects of the entire central Florida region of which Orlando is the financial, trading and amusement capital. It was possible here to analyze each major segment of Orlando's economy and to estimate its effect upon housing demands more thoroughly than was possible in the case of each of the hundreds of industries in the largest metropolitan communities. Since the citrus and cattle industries and the general agricultural background are of paramount importance in Orlando's economy, it was possible here to study the impact of national economic trends upon the specific elements which support the growth of population and purchasing power in Orlando.

This survey accordingly should be useful not only to Realtors in estimating their market for houses and other real estate but also to the retail merchant in forecasting future business volume, to the public utilities in preparing for expansion, and to the citrus, cattle and other agricultural interests in estimating their future market. Finally, this report was prepared as the economic foundation for a master physical plan for the city and the metropolitan region and as such it is offered as a contribution by the Orlando Board of Realtors to the city and county planning commissions.

In preparing this report I have been greatly aided by the reports of the Florida State Marketing Bureau, the published reports of the United States Department of Agriculture, the reports of the State Plant Board, by the studies of Mr. Zach Savage on the Florida citrus industry, by the United States Census publications on population and housing, by the studies of Dr. J. Wayne Reitz, by the Florida Agricultural Statistical Reports, by economic articles in the Orlando Sentinel Star, by data furnished by Orlando Merchants Association and by Mr. Harold V. Condict, Mr. George Brass, Mrs. Georgia von Schiller, Miss Edna L. O'Harra and other members of the Orlando Board of Realtors in furnishing data on the maps on the types of residential areas and the land suitable for new residential development in the Orlando region. Mr. A. Clague assisted in collecting material for the map showing land suitable for residential uses in the Orlando region and he also executed the map. Mr. L. H. Galiher assisted in collecting data for the map on types of residential areas, and he also executed this map.

In sponsoring, financing and aiding in the collection of material for this report, the Orlando Board of Realtors has performed an unselfish public service. Mrs. Georgia von Schiller, President of the Orlando Board of Realtors, Mr. Harold V. Condict, Miss Edna L. O'Harra, Mr. George Brass, Miss Evelyn Bledsoe, Secretary of the Orlando Board of Realtors, the other members listed on inside front cover page, who have subscribed to the financing of this study, and the Greater Orlando Chamber of Commerce which aided in financing its publication, planted and dedicated to the people of Orlando in this year of 1946 a new crop —this survey of the economic resources of the Orlando region. It is to be hoped that the citizens of Orlando will cultivate and fertilize the tender shoots so that they will develop into the full bearing groves of the greater Orlando of the future.

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Summary of the Report

ORANGE County, Florida, has basic economic forces powerful enough to increase its population from 87,000 in 1945 to 122,000 in 1950 and to 140,000 in 1955. The number of families will increase from 25,300 in 1945 to 36,000 in 1950 and 42,400 in 1955.

Of the 10,700 new families added to Orange County from 1945 to 1950, 5,000 will have incomes sufficient to buy new homes if further inflation in building costs is checked at some reasonable level.

This demand for 5,000 new homes or 1,000 houses a year will create construction activity double the volume of 1941 in Orlando. As the financial, cultural and recreation center of Central Florida, the Orlando region will grow more rapidly than its trade area.

The Counties in the immediate trade area of Orlando—Lake, Seminole, Osceola and Brevard, will likewise register marked population gains, so that the entire five counties will increase in numbers from 169,000 in 1945 to 220,000 in 1950 and 250,000 in 1955.

This population growth will be sustained by the expansion of the citrus industry, which in grove care, picking, packing, canning, and concentrates will require twice as many workers in 1955 as at present. Likewise increased production of vegetables and truck crops, the growth of manufacturing industries, increased cattle production, a great rise in tourist and retired family settlement in Orlando and the increasing importance of Orlando as the financial headquarters of Central Florida will give increased employment in retail stores, hotels, utilities, and professional and domestic services.

The predicted population growth of Orange County will be sustained by an increase of total employment from 27,272 in 1940 to 54,000 in 1950 and 62,000 in 1955. The total employment in the five counties of Orange, Lake, Seminole, Osceola and Brevard will increase from 55,000 in 1940 to 96,000 in 1950 and 106,500 in 1955.

Citrus will provide a strong economic foundation for Orlando for the next five years. Citrus prices vary with the national income, and a high national income of 160 billion dollars a year or more is almost certain to prevail until 1950. Therefore citrus prices are not likely to drop to the levels of the 1930s when the national income varied from 40 to 77 billion dollars.

The increased consumption of citrus crops by canning and the new concentrates will absorb the increased production, and provide increased employment. The Florida production of oranges has doubled since 1937 while the California crop has remained constant. Since California has relatively few young groves, Florida which has just drawn ahead of California in orange production will be the chief source of supply for the increased demand for oranges in the future.

In addition to citrus the vegetable crops of the Orlando trade area are growing in importance, with celery, watermelons and cabbage ranking as leading crops.

As a result of introduction of the Brahman breeds which thrive in the Florida climate, cattle production is expanding rapidly in Osceola County.

With all its present wealth in citrus, truck crops and cattle, Central Florida has greater prospects for further expansion of its agriculture than any other region of the United States. With abundant rainfall and a year around growing season, suitable for growing a great variety of crops, only 3.6 percent of the land area of the Orlando trade area is in crops, compared with 58 percent for Iowa. The State of Florida is approximately the same size as Iowa, yet Iowa has thirteen times as much land in crops. Florida is the nation's last agricultural frontier.

The Orlando region offers a great opportunity for the expansion of consumer goods industries because of its expanding markets, its relatively low labor rates compared with the north, and its low cost of heating, its cheap land and low taxes.

Besides being the center of the rich agricultural resources with its tremendous possibilities of expansion, the Orlando region has all the advantages of the warm Central Florida winter climate which by itself is the powerful economic support of St. Petersburg, and it has besides the unique appeal of its lakes and the cultural advantages of Rollins College. As air travel reduces the time required to reach Central Florida from the eastern United States which contains four-fifths of the population and wealth of the nation to four or five hours, Orlando will draw an increasing proportion of families seeking winter vacations or desiring to retire on pensions.

Since there will be an increase of nearly 4,000,000 persons in the age group from 65 to 74 years of age from 1940 to 1970, and since a large proportion of elderly people now have the benefits of pensions or social security, the market for homes to sell to retired couples will constantly expand in the next few decades.

The Orlando region has an abundant supply of land suitable for residential development—at least 100 square miles within 9 miles from the city limits of Orlando, while the total demand for new homesites will not absorb more than 6 or 7 square miles. Hence there is no justification for marked increase in the prices of raw land, except that possessing the unusual advantages of lake frontage.

In 1940, in the five counties of Orange, Lake, Seminole, Brevard and Osceola, there were 7,149 dwelling units needing major repairs and 10,436 units in good physical repair which lacked running water. This indicates a great potential demand for replacing existing obsolete houses in the Orlando region if general family incomes rise or housing costs are lowered.

There is a concentration of the best housing in the trade area in Orlando and Winter Park. With less than one-third of the total non-farm homes in the surrounding five counties, Orlando and Winter Park had over 70 percent of all classes of urban dwelling units in the five counties renting for $30 a month or more in 1940.

The building of 5,000 new homes in the Orlando metropolitan region from 1946 to 1950 will create the opportunity to build some of the finest model planned communities in the United States in Central Florida.

The Economic and Housing Survey of the Orlando Metropolitan Region

Purpose of the Survey. The purpose of this survey of the economic resources of the Orlando Metropolitan Region is to determine the number of homes which can be built and sold by private enterprise in the Orlando region in the next 10 years and the amount of land which will be required as sites for these new residences. The sound growth of any region depends upon its opportunities for employment and hence an analysis of the basic economic support of the Orlando region is indispensible in determining the growth in the number of families and the number of houses required in each price range.

A map showing the location of each type of residential area from the lowest to the highest rent has been prepared (Fig. 2). Another map shows the amount of land in a circuit 9 miles from Orlando that is available for new residential development.

A comparison of the total number of home sites required for new dwellings together with the estimated area of land for each home and the amount of land required for recreation areas, schools, shopping centers and churches with the total amount of residential land available will indicate how much of the present available land will be absorbed by new building in the next 10 years.

1. THE ECONOMIC BASE OF THE ORLANDO METROPOLITAN REGION.

The Orlando region has two major basic economic supports. It has the same warm winter weather of St. Petersburg and other central Florida areas, which attract tourists and permanent winter residents, but it also is the financial, marketing, wholesale and retail center of the Florida citrus belt. This two-fold economic foundation gives Orlando stability and it also enhances its prospects for future growth. Let us consider first the basic support from the growing of citrus crops in the Orlando trade area.

The Orlando Trade Area. The Orlando trade area may be divided into two parts; the first the immediate trade area in which Orlando is the dominant retail center, and second, the fringe area in which other cities such as Lakeland, Daytona Beach and Ocala are independent trading communities. The immediate trading area consists of Orange, Lake, Osceola, Seminole and Brevard Counties, which had an aggregate population in 1945 of 169,189. This area will hereinafter be referred to as the immediate trade area. The fringe trade area which extends beyond the immediate trade area to a radius of 75 miles includes Polk, Marion, Sumter, Volusia and Indian River Counties with a total population of 226,263 in 1945. These outer trade areas will be called the fringe area. The total Orlando trade area had a population of 395,454 in 1945. (See Table 1).

Citrus Crops in the Orlando Trade Area. Citrus crops are the predominant agricultural support of the Orlando region, comprising in the 1944-45 season, 86.5 percent of the value of all crops in the entire trade area. In this ten county trade area was 64 percent of the orange acreage, 56 percent of the grapefruit acreage and 66.7 percent of the tangerine acreage of the State of Florida. In this same circuit there was concentrated 62 percent of the total citrus acreage and 63.4 percent of the packed value of all citrus crops in Florida in the 1944-45 season. Within the five counties immediately encircling Orlando there was nearly one third of the orange (31.2 percent) and tangerine (30.8 percent) acreage in 1944-45 and 29 percent of the packed value of all citrus crops in the State (See Table 2). Of the oranges packed and shipped 81 per-

Table 1

POPULATION OF COUNTIES IN ORLANDO TRADE AREA, 1890-1945

Immediate Trade Area

	1890	1900	1910	1920	1930	1940	1945
Orange)	12,584	11,374	19,107	(19,890	49,737	70,074	86,782
Seminole)				(10,986	18,375	22,304	24,560
Brevard	3,401	5,158	4,717	8,505	13,283	16,042	19,339
Lake	8,034	7,467	9,509	12,744	23,161	27,255	27,946
Osceola	3,133	3,444	5,507	7,195	10,699	10,119	10,562
Total Immediate Trade Area	27,152	27,443	38,840	59,320	115,255	145,794	169,189

Fringe Counties

Volusia	8,467	10,003	16,510	23,374	42,757	53,710	58,492
Indian River	Part of St. Lucie County before 1930				6,724	8,957	9,079
Marion	20,796	24,403	26,941	23,968	29,578	31,243	35,132
Polk	7,905	12,172	24,148	33,661	72,291	86,665	112,429
Sumter	5,363	6,187	6,696	7,851	10,644	11,041	11,133
Total Fringe Counties	42,531	53,065	74,295	93,854	161,994	191,616	226,265
TOTAL TRADE AREA	69,683	80,508	113,135	153,174	277,249	337,410	395,454

Table 2

ACREAGE IN BEARING CITRUS GROVES AND VALUE OF CITRUS AND TOTAL AGRICULTURAL PRODUCTION IN COUNTIES IN TRADE AREA OF ORLANDO—1944-45 SEASON

Immediate Trade Area

	ACREAGE					PACKED VALUE	
	Oranges	*Grapefruit*	*Tangerines*	*Total Citrus*	*Total Crops*	*Citrus*	*Total Crops*
Orange	33,320	4,060	3,044	40,424	44,529	$21,853,060	$24,906,648
Seminole	6,660	770	820	8,250	15,296	4,492,620	12,498,573
Brevard	11,540	3,840	468	15,848	16,146	8,426,252	8,601,959
Lake	24,100	7,200	1,944	33,244	41,575	17,842,036	19,911,494
Osceola	4,360	950	960	5,905	6,005	5,905,000	6,037,000
Total in Immediate Trade Area	79,980	16,820	7,236	103,671	123,551	$58,518,968	$71,955,674
Percent of 50 Leading Counties in Immediate Trade Area	31.2	17.5	30.8	27.6	19.2	29.0	23.0
Fringe Counties							
Volusia	12,560	1,440	1,920	15,920	16,572	$ 8,725,520	$ 8,957,371
Indian River	4,870	6,820	515	12,205	13,079	6,480,040	6,977,855
Marion	8,970	770	398	10,138	19,791	5,421,742	9,367,565
Polk	55,630	27,840	5,457	88,927	91,107	47,692,228	48,787,107
Sumter	1,930	150	70	2,150	7,540	1,147,550	3,225,665
Total in Fringe Counties	83,960	37,020	8,360	129,340	148,089	$ 69,467,080	$ 77,315,563
Total Trade Area	163,940	53,840	15,596	233,011	271,640	$127,986,048	$148,271,237
50 Leading Counties* in Florida	256,340	96,000	23,419	375,759	643,549	$201,912,530	$314,841,297
Percent of 50 Leading Counties in Trade Area	64.0	56.1	66.7	62.0	42.2	63.4	47.0

Table 3

Citrus Fruit Packed in Counties in Trade Area of Orlando September 1, 1944 to June 30, 1945 Shipments (boxes)

	Oranges	*Tangerines*	*Grapefruit*	*Total*
State	25,983,457	3,406,216	5,990,076	35,379,749
Immediate Trade Area				
Orange	6,033,491	803,192	416,481	7,253,164
Seminole	1,215,768	151,839	125,440	1,493,047
Brevard	844,035	25,067	375,925	1,245,027
Lake	3,328,532	358,833	365,433	4,052,798
Osceola	119,257	22,257	20,997	162,461
Total Immediate Trade Area	11,541,083	1,361,188	1,304,276	14,206,497
Percentage of State in Immediate Trade Area	44.4	40.0	21.8	40.2
Fringe Counties				
Volusia	672,351	168,549	46,554	887,454
Indian River	350,936	32,105	754,328	1,137,369
Marion	1,002,346	51,810	56,809	1,110,965
Polk	7,536,635	1,059,755	1,856,292	10,452,582
Total Fringe Counties	9,562,268	1,312,219	2,713,983	13,588,370
Total Trade Area	21,103,351	2,673,407	4,018,259	27,794,867
Percentage of State in Total Trade Area	81.2	78.5	67.1	78.6

*The 17 Counties omitted account for half of one percent of acreage and value in the State.
Source: Florida State Marketing Bureau Annual Fruit and Vegetable Report 1944-5 Season.

cent came from the total trade area, and 44.4 percent from the immediate trade area (See Table 3).

Importance of Citrus Crops in Employment in the Orlando Region. The total packed value of citrus crops in the immediate five county trade area of Orlando was $58,518,968 in 1944-1945 and the total value in the entire ten county area was $127,986,530. The care of 233,000 acres of citrus crops in the entire trade area would give employment to approximately 10,000 men for 250 days a year.* The packing of 21,000,000 boxes of oranges, 2,700,000 boxes of tangerines and 4,000,000 boxes of grapefruit in the total trade area would give additional employment to 14,000 persons working 7 months a year. The picking of 37,000,000 boxes of oranges and 21,000,000 boxes of grapefruit in the entire trade area requires over 5,000 pickers working half a year. In addition 1,500 persons are working in canneries in Orlando alone.

Table 4

Number of Man Hours of Labor Required for Cultivating, Spraying and Fertilizing a Typical 58-Acre Bearing Grove in Orange County, Florida, Season 1945-1946

	Man Hours
Tractor Work	210
Hauling Fertilizer	36
Irrigating	626
Checking Fruit	105
Pruning	1,696
Spreading Fertilizer	429
Hauling Brush	803
Hoeing	1,034
Spraying	157
TOTAL	5,096

Growth of Citrus Industry in Florida and California. The production of oranges in the United States increased from less than 10,000,000 boxes in 1903 to 24,000,000 boxes in 1914, to 40,000,000 boxes in 1926, 55,000,000 boxes in 1928 and 1930 to 107,000,000 boxes in the current 1945-1946 season. (See Table 5).

There have sometimes been marked fluctuations in the total crop due to freezes or unseasonable weather. In 1913 the production of 12,108,000 boxes for the United States was only two-thirds that of 1912 and half that of 1914. In 1918 the production of 11,202,000 boxes again was less than half that of 1917 and 1919. In 1927 and 1929 the crop was only 60 percent of that of 1928 or 1930. In 1913, 1918, 1927 and 1929 the production of oranges declined both in California and Florida. In 1933 and 1935, the orange crop declined in California while it gained in Florida. In no year since 1900, however, has the Florida crop declined more than 50 percent.

Notwithstanding these annual fluctuations, the ten year average production of oranges in the United States increased from 14,454,000 in 1903 to 1912, to 26,441,000 boxes in 1913 to 1922, to 42,088,000 boxes in 1923 to 1932 and 106,720,000 boxes in 1945-46.

The consumption of oranges in the United States has thus increased seven times since the period before World War I and it has more than doubled since the decade of the 1920s.

Table 5

PRODUCTION OF ORANGES IN FLORIDA, CALIFORNIA AND THE UNITED STATES**

1903-1946

Year	*Calif.*	*Fla.*	*U.S. Total*	*Percent of Total Production* Calif.	Fla.
		(*000 omitted*)			
1903	8,095	1,465	9,560	84.7	15.3
1904	10,247	1,951	12,198	84.0	16.0
1905	10,226	2,363	12,598	81.2	18.8
1906	8,973	2,961	11,934	75.2	24.8
1907	10,291	2,899	13,190	78.0	22.0
1908	10,743	3,793	14,536	73.9	26.1
1909	13,449	4,279	17,728	75.9	24.1
1910	11,188	4,853	16,041	69.7	30.3
1911	15,645	3,749	19,394	80.7	19.3
1912	13,681	3,648	17,329	78.9	21.1
1913	6,347	5,761	12,108	52.4	47.6
1914	17,986	6,230	24,216	74.3	25.7
1915	15,858	7,314	23,172	68.4	31.6
1916	15,490	6,150	21,640	71.6	28.4
1917	20,035	6,933	26,968	74.3	25.7
1918	7,702	3,500	11,202	68.8	31.2
1919	17,073	7,533	24,783	68.9	30.4
1920	22,547	9,457	32,218	70.0	29.4
1921	13,921	8,371	22,539	61.8	37.1
1922	21,286	10,897	32,569	65.4	33.5
1923	24,324	13,725	38,496	63.2	35.7
1924	18,535	11,639	30,328	61.1	38.4
1925	24,200	10,044	34,597	69.9	29.0
1926	28,167	11,512	40,062	70.3	28.7
1927	22,737	9,487	32,708	69.5	29.0
1928	38,994	15,588	55,131	70.7	28.3
1929	21,483	10,304	32,621	65.9	31.6
1930	35,470	19,211	55,362	64.1	34.7
1931	34,900	14,220	50,164	69.6	28.3
1932	34,265	16,200	51,415	66.6	31.5
1933	28,439	18,100	47,374	60.0	38.2
1934	45,047	17,600	63,988	70.4	27.5
1935	32,809	18,000	52,073	63.0	34.6
1936	30,063	22,500	55,174	54.5	40.8
1937	45,914	26,200	74,285	63.2	36.1
1938	41,420	33,300	78,531	52.7	42.4
1939	44,425	28,000	75,742	58.7	37.0
1940	50,778	31,300	85,510	59.4	36.6
1941	52,155	29,300	85,163	61.2	34.4
1942	44,329	41,400	89,349	49.6	46.3
1943	51,961	49,800	106,651	48.7	46.7
1944	60,300	46,700	113,010	53.3	41.3
1945	46,600	54,000	106,720	43.7	50.5

Oranges, once a luxury, have become a part of the daily diet as an essential Vitamin C element. Over seventy percent of the orange crop is now consumed in the form of juice, and even the present crop provides an average of only two fluid ounces of juice per capita

*Estimate of man days required to care for grove based on data supplied by E. B. Conoley. (See Table 4).
**Including Tangerines.

compared with six fluid ounces considered necessary to provide each person with an adequate amount of Vitamin C.

The outstanding feature of the trends of orange production has been the rate at which the Florida crop has increased relative to California. Discouraged by the great freeze of 1894-1895, the Florida growers were producing only one fifth as much as California from 1903 to 1905. California continued to hold a large lead with more than double the Florida output until 1935. In the last ten years Florida has forged ahead until the production of 54,000,000 boxes in Florida in the current season exceeds the California production of 46,600,000 boxes.

The latest Florida orange crop is seventeen times the average Florida crop of 3,000,000 boxes in the decade from 1903 to 1912, seven times the 7,215,000 box average for the decade 1913 to 1922, and four times the 13,200,000 box average of the decade 1923 to 1932.

It is estimated that the Florida orange crop will continue to grow as a result of increased yields on young groves and of many new groves planted recently which will come into bearing in five years until a total Florida orange crop of 100,000,000 boxes may be realized by 1957 or soon thereafter.

The increased production of Florida oranges is being absorbed in part by the canners. (See Table 6).

Table 6

TOTAL PRODUCTION OF FLORIDA ORANGES AND GRAPEFRUIT AND PROPORTION CANNED

	ORANGES			GRAPEFRUIT		
	Total Production Boxes	*Portion Canned Boxes*	*Percent*	*Total Production Boxes*	*Portion Canned Boxes*	*Percent*
1931-32	12,548,000	36,000	0.3	10,431,000	930,000	9.0
1932-33	14,964,000	50,000	0.3	11,926,000	2,750,000	23.1
1933-34	16,171,000	61,000	0.4	11,113,000	2,605,000	23.4
1934-35	15,590,000	178,000	1.1	15,243,000	5,603,000	37.0
1935-36	15,865,000	140,000	0.9	11,504,000	3,760,000	32.7
1936-37	19,461,000	620,000	3.2	18,121,000	6,685,000	37.0
1937-38	24,303,000	1,055,000	4.3	14,379,000	5,793,000	40.3
1938-39	30,015,000	1,867,000	6.2	23,050,000	8,395,000	36.4
1939-40	25,065,000	4,170,000	16.6	15,650,000	8,800,000	56.2
1940-41	28,752,000	3,941,000	13.7	24,387,000	13,871,000	57.0
1941-42	27,200,000	4,197,000	15.4	19,100,000	10,143,000	53.1
1942-43	37,200,000	6,438,000	17.3	27,300,000	17,584,000	64.4
1943-44	46,200,000	10,912,501	23.6	31,000,000	20,429,510	66.0
1944-45	42,800,000	14,344,000	33.5	22,300,000	15,136,000	68.0
1945-46*	50,000,000	17,000,000	34.0	32,000,000	21,500,000	67.2

Table 7

NUMBER OF CITRUS TREES MOVED FROM FLORIDA NURSERIES TO FLORIDA DESTINATIONS AND APPROXIMATE ACREAGE OF NEW ORANGE, MANDARIN AND GRAPEFRUIT GROVES IN FLORIDA—1928 TO 1945

	Trees Planted			*Approximate Acreage in New Groves*		
	Oranges	*Mandarins*	*Grapefruit*	*Oranges*	*Mandarins*	*Grapefruit*
1928-29	699,343	271,403	305,641	10,450	4,000	4,600
1929-30	295,031	139,877	330,266	4,400	2,100	5,000
1930-31	401,023	91,725	264,803	6,000	1,400	4,000
1931-32	430,379	62,492	73,401	6,400	1,000	1,100
1932-33	499,679	53,391	144,597	7,300	800	2,200
1933-34	440,429	74,187	158,471	6,600	1,100	2,400
1934-35	351,289	30,880	89,468	5,300	500	1,300
1935-36	530,564	34,128	153,986	7,900	500	2,300
1936-37	746,849	38,427	106,421	11,200	500	1,500
1937-38	799,439	26,507	150,557	12,000	400	2,300
1938-39	512,526	21,795	87,876	7,600	300	1,300
1939-40	403,775	21,819	80,588	7,000	300	1,200
1940-41	592,208	36,156	85,954	9,000	500	1,300
1941-42	579,809	58,413	64,069	8,700	900	1,000
1942-43	533,802	55,545	104,754	8,000	800	1,500
1943-44	701,977	65,184	136,637	10,500	1,000	2,000
1944-45	611,854	81,391	125,135	9,100	1,200	1,900

Source: Nursery Inspector, State Plant Board, Gainesville, Florida.

*Estimated

Only 36,000 boxes of oranges were canned in 1936, less than one-third of one percent of the Florida crop. This increased to 1,000,000 boxes in 1937-38, over 4,000,000 boxes in 1941-1942, 11,000,000 boxes in 1943-44 and 17,000,000 boxes in 1945-46. The improvement in the quality of the canned product, stimulated by sales to the Armed Forces, and the mixing with grapefruit juice increased the output of canned orange juice products seventeen times in the last eight years. A further rapid expansion of demand for oranges is expected from the use in new dehydrated concentrates.

Thus fresh fruit demand for Florida oranges increased from 12,500,000 boxes in 1931 to 1932, 25,000,000 boxes in 1940 to 1941 and 33,000,000 boxes in 1945 to 1946.

Demand for oranges for canning increased from practically nothing in 1931 to 17,000,000 boxes for the current season and the demand for concentrates may well grow rapidly to help absorb the future increase in production.

This entire increased demand for oranges will be concentrated upon Florida, because in no other State is there any prospect for any material increase in orange production. California with 239,794 acres of bearing orange groves in 1946 compared with 256,300 acres for Florida, has only 5,589 acres of non-bearing orange groves compared with over 36,000 acres of orange groves less than five years old in Florida.

As Table 7 indicates, there are 84,000 acres of orange groves in Florida less than ten years old, and 52,000 acres from ten to eighteen years old, all of which will bear increasing yields. Even the 109,000 acres of orange groves in Florida, over eighteen years of age will show some increased yields. The use of more fertilizers will likewise tend to increase total yields.

Grapefruit Production. In contrast with oranges, grapefruit production in Florida has not expanded rapidly. Prior to 1930, Florida was producing 85 to 95 percent of all the grapefruit sold in the United States, with a production ranging from 6 to 8 million boxes annually from 1919 to 1929. (See Table 8). The Texas crop began to gain rapidly from 1,140,000 boxes in 1933 to 10,200,000 boxes in 1937 and to 23,000,000 boxes in 1945. Arizona likewise increased its crop. By 1943, Florida was producing only half of the nation's grapefruit, its production from 1931 to 1934 was 10,000,000 and 11,000,000 boxes annually which increased to 32,000,000 boxes in the current season. This greatly increased output of grapefruit was absorbed chiefly by the canners who took 21,500,000 of the current crop compared with less than 1,000,000 boxes in the 1931 to 1932 season. (See Table 6). Fresh fruit sales of Florida grapefruit have remained static at about 10,000,000 boxes annually in the last fifteen years, the entire increase in the crop having gone to the canneries.

California has orange groves but few grapefruit groves, Texas has grapefruit but few oranges. Florida alone has oranges and grapefruit, frequently mixed in the same groves. This favors the growth of mixed orange and grapefruit juice canning in Florida.

Nevertheless the price differential between grapefruit and oranges has been increasing in favor of oranges. Only 21,000 acres of grapefruit groves have been planted in Florida in the last thirteen years compared with 100,000 acres of oranges, so that the production of Florida grapefruit will increase but slowly compared with the increasing orange crop.

Exports of Citrus. As Tables 9 and 10 show, exports of oranges since 1939 have absorbed only 5 percent of the United States production, while exports of grapefruit have accounted for only 2 percent of the domestic crop in the same period. Exports of oranges rose to as much as 10 percent of the crop in 1937 when orange prices were low, and prior to 1938, the exports of fresh fruit took more of the crop than the canners. Since 1939 however, the boxes of oranges taken for canning have been more than double the total exports and the proportion used in canning and concentrates will undoubtedly steadily increase in the future. Exports of fresh grapefruit have been approximately 1,000,000 boxes annually since 1929, and as the American grapefruit crop increased from 11,000,000 boxes in 1929 to 47,000,000 boxes in 1943, the percentage exported declined from 7.2 percent to 2 percent.

Table 8

PRODUCTION—ORANGES, GRAPEFRUIT, TANGERINES

(000 omitted)

	Oranges		*Grapefruit*		*Tang*
	*Fla.**	*Calif.*	*Fla.*	*Texas*	*Fla.*
1909-10	5,300	12,239	1,100		
1910-11	3,600	17,078	1,200		
1911-12	3,950	15,273	1,150		
1912-13	6,700	6,870	2,000		
1913-14	6,200	19,688	2,200		
1914-15	8,000	17,407	2,400		
1915-16	6,500	17,147	2,400		
1916-17	5,700	21,315	2,500		
1917-18	4,000	8,267	2,000		
1918-19	6,000	18,315	3,500		
1919-20	7,550	16,632	5,900	3	450
1920-21	8,700	23,771	5,800	5	700
1921-22	7,850	14,021	6,700	8	550
1922-23	10,150	21,283	7,800	35	750
1923-24	13,150	24,153	8,500	65	550
1924-25	10,400	18,506	8,900	301	900
1925-26	9,500	24,200	7,600	200	700
1926-27	10,100	28,252	8,600	361	900
1927-28	8,650	22,737	7,500	524	850
1928-29	15,000	39,159	11,300	753	1,500
1929-30	8,950	21,195	8,300	1,550	850
1930-31	16,800	35,179	15,800	1,200	2,400
1931-32	12,200	34,658	10,700	2,600	2,000
1932-33	14,500	34,265	11,600	1,440	1,900
1933-34	15,900	28,439	10,900	1,200	2,000
1934-35	15,600	45,047	15,200	2,740	2,000
1935-36	15,900	32,809	11,500	2,780	2,100
1936-37	19,100	29,827	18,100	9,630	3,000
1937-38	23,900	45,914	14,600	11,840	2,300
1938-39	29,900	41,420	23,300	15,670	3,400
1939-40	25,600	44,425	15,900	14,400	2,400
1940-41	28,600	50,778	24,600	13,650	2,700
1941-42	27,200	52,155	19,200	14,500	2,100
1942-43	37,200	44,329	27,300	17,510	4,200
1943-44	46,200	51,961	31,000	17,710	3,600
1944-45	42,800	60,300	22,300	22,300	4,000
1945-46	49,500	46,600	32,000	23,000	4,500

*Including tangerines from 1909-10 to 1918-19.

The Production, Prices, Net Returns, and Risks in Citrus Production. As a combined result of the increase of all Florida citrus crops from 24,900,000 boxes in 1931-32 to 86,000,000 boxes in 1945-46, and the increase in the average gross price of oranges per box from 86 cents in 1932-33 and 71 cents in 1940-41 to over $2.50 in 1945-46, the net returns on Florida citrus groves increased eight times from 1941 to 1944. The prices of citrus groves have not more than doubled since 1940 so that the increase in the net returns from $40.00 an acre for the ten year period from 1931 to 1941 to $290.00 in the three year period from 1941 to 1944 has been reflected only to a limited degree in sales prices of the groves°. The average net returns on the groves reporting to the Florida Agricultural Extension Service of $49.92 an acre for the ten year period from 1931 to 1941 would produce a value of $665.00 an acre on a 6 percent capitalization basis, while the net return per acre of $432.69 for the season of 1943-44 would support a price of $7,212 an acre on a 6 percent capitalization basis°°. Actually groves in full bearing have been selling for from $1,000 to $2,000 an acre in Orange, Lake and Polk Counties so that present sales prices of groves have not been pushed by speculative forces to anywhere near a level capitalizing the favorable returns of recent years.

Table 9

PRODUCTION AND EXPORTS OF ORANGES FROM THE UNITED STATES—1929-1943

	Production (Boxes)	Processed (Boxes)	Season Average Return to Growers per Box	Exports (Boxes)	Percent U. S. Production Exported
1929	31,829,000	647,000	$3.59	2,189,000	6.9
1930	55,060,000	2,035,000	1.35	4,936,000	9.0
1931	49,902,000	2,532,000	1.22	3,203,000	8.4
1932	51,615,000	2,688,000	0.88	3,394,000	6.6
1933	47,174,000	899,000	1.38	3,296,000	7.0
1934	63,988,000	3,956,000	1.15	5,425,000	8.5
1935	52,073,000	1,942,000	1.51	4,209,000	8.0
1936	54,538,000	6,591,000	1.75	2,488,000	4.5
1937	74,285,000	5,830,000	0.84	7,597,000	10.2
1938	78,531,000	6,058,000	0.79	6,471,000	8.2
1939	75,742,000	7,238,000	0.94	3,828,000	5.1
1940	85,510,000	9,848,000	1.20	4,360,000	5.1
1941	85,163,000	11,442,000	1.47	4,570,000	5.4
1942	89,316,000	13,945,000	2.40	4,908,000	5.5
1943	105,416,000		2.56		

Source: U. S. Department of Agriculture, Agricultural Statistics, 1944.

Table 10

PRODUCTION AND EXPORTS OF GRAPEFRUIT FROM THE UNITED STATES—1929-1943

	Production (Boxes)	Processed (Boxes)	Season Average Return to Growers per Box	Exports (Boxes)	Percent U. S. Production Exported
1929	11,215,000	1,660,000	$1.89	809,000	7.2
1930	18,690,000	2,949,000	0.73	1,361,000	7.3
1931	15,181,000	1,036,000	0.80	1,119,000	7.4
1932	15,004,000	2,587,000	0.58	905,000	6.0
1933	14,672,000	2,525,000	0.83	1,000,000	7.0
1934	21,347,000	6,248,000	0.55	1,022,000	4.8
1935	18,347,000	4,498,000	0.88	928,000	5.0
1936	30,670,000	10,025,000	0.58	704,000	2.3
1937	31,133,000	12,055,000	0.57	1,004,000	3.2
1938	43,594,000	15,181,000	0.32	1,235,000	2.8
1939	35,192,000	16,318,000	0.44	811,000	2.3
1940	42,883,000	20,955,000	0.43	808,000	1.9
1941	40,261,000	17,961,000	0.79	855,000	2.1
1942	50,481,000	27,194,000	1.15	1,069,000	2.0
1943	55,510,000		1.46		

In view of the vital role the citrus industry plays in the economic life of Orlando, it is of vital importance to examine carefully the future prospects and risks of the citrus industry in Central Florida. Since the income of not only growers, but packers, canners, pickers, grove caretakers, and the fertilizer industry is directly supported by citrus, and the income of the retail trades, the professions, the banks, the City employees, the construction industry and others in the Orlando metropolitan area is chiefly derived from citrus crops, we ask in this report the $64 question. The question is, is the great wealth recently derived from citrus which increased bank deposits in the Orlando region 356 percent since 1940 and doubled retail trade likely to fall off sharply in the near future as a result of freezes or a cycle of low prices? Is the citrus industry in the future likely to be fairly stable or characterized by wild fluctuations? Let us consider each of the undeniable elements of risk.

Risk of Freezing. The great freeze of 1894-1895, in which an early freeze in December 1894 weakened the trees and a late freeze in February 1895 when the sap was rising froze down to the trunks practically all the citrus trees in Florida, has long exaggerated the risk of citrus growing. Greater experience with sites best adapted for groves, favoring selection of areas to the south or east of lakes and on elevations with air drainage, has eliminated lands not well adapted to citrus. The use of mineral fertilizers has built up the resistance of trees against freezing. The fact that there are now 390,500 acres of bearing citrus groves in Florida shows that most trees have survived cold spells.

Cold waves which bring freezing weather come from the northwestern United States at those times when extreme cold in the northwest coincides with low pressure areas in Florida. As Table 11 presenting the lowest temperatures in Orlando since 1930 shows, temperatures below freezing were registered at some time in twelve of the last sixteen years. Citrus fruit can stand temperatures down to 28 for short periods without damage and trees down to 25 degrees. The lowest temperatures in Orlando since 1930 were 22 degrees in December 1934, 24 degrees in December 1935, 25 degrees in December 1937, 20 degrees in January 1940. These temperatures caused some tree damage. Nevertheless, the Florida orange crop in 1934-1935, 1935-1936, 1937-1938, and 1940-1941 was respectively 15,600,000, 15,900,000, 23,900,000 and 28,600,000 boxes, which indicated no declines from the

°Zach Savage: Trends in Costs and Returns of Florida Citrus— *The Citrus Industry*, March 1946, pp. 5-7. Based on from 7132 to 8609 acres of groves, 10 to 20 years old, with 64 percent orange, 32 percent grapefruit and 4 percent tangerine trees.

°°Ibid. April, 1946. pp. 5-6.

Table 11

ORLANDO, ORANGE COUNTY, FLORIDA

Lowest Temperature

Year	*Jan.*	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Annual*
1930	39	43	37	55	63	64	68	68	68	42	38	36	36
1931	33	42	39	47	60	65	71	71	63	49	52	55	33
1932	35	39	27	44	52	64	68	69	61	49	33	32	27
1933	35	38	34	48	58	57	67	67	67	57	40	39	35
1934	32	37	33	43	54	63	68	66	63	48	35	22	22
1935	31	29	36	44	56	64	67	69	65	55	36	24	24
1936	30	28	38	39	57	63	65	65	65	53	32	32	28
1937	50	31	38	43	57	61	64	68	63	38	30	25	25
1938	28	32	43	43	55	62	65	64	55	44	31	29	28
1939	29	30	44	43	54	68	68	68	67	58	38	30	29
1940	20	30	36	39	47	64	68	67	62	48	26	35	20
1941	31	28	27	47	49	63	65	67	64	58	38	38	27
1942	28	34	34	45	57	67	69	70	66	53	39	35	28
1943	35	26	29	41	54	68	67	67	61	39	36	30	30
1944	32	33	40	34	50	68	68	71	68	46	41	30	30
1945	40	34	46	57	45	68	70	70	69	53	32	35	32
1946	36	40	43	53	64								

Table 12

ORLANDO, ORANGE COUNTY, FLORIDA

Highest Temperature

Year	*Jan.*	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Annual*
1930	85	86	83	92	96	98	98	98	95	89	89	79	98
1931	78	78	81	89	93	98	99	99	95	89	86	87	99
1932	86	87	88	92	94	96	100	96	93	92	89	84	100
1933	83	86	89	87	95	98	94	97	98	92	85	84	98
1934	84	84	88	90	94	97	95	98	97	96	91	88	98
1935	85	90	93	96	96	98	97	99	96	91	85	82	99
1936	86	82	90	93	95	96	101	98	98	93	90	84	101
1937	86	84	91	91	96	97	98	97	96	92	85	80	98
1938	86	85	90	94	97	96	94	100	94	89	88	81	100
1939	83	88	90	90	94	99	96	95	97	92	84	82	99
1940	79	83	88	89	96	100	98	98	96	88	88	85	100
1941	80	82	89	91	95	100	97	99	96	96	90	85	100
1942	82	85	91	92	94	97	102	100	97	92	89	85	102
1943	85	87	92	92	95	98	95	100	95	88	87	82	100
1944	82	89	94	94	94	100	96	95	97	93	83	83	100
1945	81	88	92	96	101	100	96	96	95	91	87	83	102
1946	83	84	89	91	94								

preceding warmer years (See Table 8). Hence temperatures as low as 20 and 22 have not appreciably reduced the Florida total citrus crops. In 1929-1930, the crop of Florida oranges was only 8,950,000 boxes compared with 15,000,000 for the preceding year, but this was the greatest drop on record since 1917 and represented a decline of only 40 percent. In no year since 1895 has there been a loss amounting to as much as 50 percent of the Florida crop by freezing. Since January 1940, the temperature in Orlando has not dropped below 27. While temperatures as low as 20 may occur every six or seven years, most of the existing bearing trees have survived two cold cycles, and even most of the fruit was harvested in the cold years. Thus, the risk of total loss to either trees or fruit in citrus groves appears to be negligible, and there is a sufficient profit margin to the grower to enable him to absorb slight losses.

Hurricanes. Occasional hurricanes have blown over some of the larger trees in groves in the path of the storm, but in very few cases, if any, has more than a small proportion of the trees been destroyed.

Drouths. While the average total rainfall in the Florida citrus belt is ample, the annual rainfall is sometimes not properly distributed. In 1945 there was only 2.77 inches of rainfall in the Orlando region from February to May inclusive. The driest year since 1930 was 1938, when there was only 34.55 inches of rainfall. The heaviest rainfall since 1930 was in 1934 when 60.52 inches of rain fell (See Table 13). Yet the Florida crop of oranges even in 1938-39, the dry year, was 33,300,000 boxes—the highest production up to that time. Since there is an ample supply of underground water, the adverse effect of occasional dry spells can be eliminated by digging wells in the groves.

Insects and Disease. Spraying groves four times a year has kept insects under control, although at a constant expense. While certain diseases like gummosis attack and gradually kill individual trees, there

Table 13

ORLANDO, ORANGE COUNTY, FLORIDA

Rainfall

Year	*Jan.*	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Annual*
1892	1.72	2.00	1.29	0.60	2.67	4.37	1.63	9.05	9.12	4.66	0.07	2.03	39.21
1893	2.09	1.51	2.15	1.51	5.31	8.90	3.74	6.34	5.77	9.02	2.67	1.89	50.90
1894	1.86	.98	.88	1.14	3.39	7.86	7.02	7.61	14.95	4.70	3.22	.56	54.17
1895	1.29	3.11	1.70	5.15	7.31	3.21	4.36	4.78	4.27	3.78	1.57	1.78	42.31
1896	5.03	2.95	1.39	.00	2.71	11.18	10.66	5.24	3.88	1.07	3.53	1.95	49.59
1897	1.16	3.99	.38	2.83	1.25	6.53	9.26	4.32	15.77	3.55	1.91	2.62	53.57
1898	.64	1.26	.54	.15	1.19	1.13	7.31	10.93	3.43	5.55	1.09	3.68	36.90
1899	5.04	8.71	.96	3.61	.96	4.15	7.01	6.28	7.77	9.22	.12	.93	54.76
1900	3.32	2.45	6.93	3.39	4.72	7.62	10.83	7.41	5.53	6.78	1.51	3.36	63.85
1901	1.07	3.27	3.89	2.47	2.15	11.81	4.28	13.18	11.12	2.20	.54	1.28	57.26
1902	1.25	4.50	1.81	2.27	1.52	6.94	5.43	3.53	13.66	4.90	.52	1.35	47.68
1903	5.69	5.48	8.37	.51	3.59	11.05	8.41	3.68	8.08	1.69	2.71	1.00	60.26
1904	4.02	2.45	1.09	2.20	2.16	9.11	6.40	6.33	5.00	8.44	1.80	1.06	50.06
1905	.41	2.12	5.13	1.71	8.12	8.13	6.15	17.13	13.11	3.42	.33	8.43	74.19
1906	5.03	.84	2.80	1.27	9.40	11.75	5.65	3.12	1.87	1.39	.23	.05	43.40
1907	.02	.10	.15	2.20	2.75	8.17	9.96	9.20	5.15	1.91	.29	4.15	44.05
1908	3.57	1.56	.25	3.74	5.50	4.84	7.03	7.04	9.94	3.18	2.31	.68	49.64
1909	1.31	1.14	1.40	2.17	2.41	3.13	12.71	8.34	3.41	1.30	.65	.67	38.64
1910	1.01	2.69	2.65	0.38	2.87	15.25	9.71	6.36	2.82	11.73	2.80	0.80	59.07
1911	.64	.06	1.29	2.36	3.07	4.94	6.27	5.66	3.71	4.23	4.73	2.65	39.61
1912	8.54	1.92	2.11	4.30	6.60	12.17	7.48	7.72	9.63	4.97	1.80	1.21	68.45
1913	.92	5.10	5.57	1.34	2.08	2.35	10.53	6.59	5.61	2.64	.17	3.49	46.39
1914	5.23	3.31	2.10	2.25	2.39	7.73	2.93	7.51	8.79	4.15	1.30	3.83	51.52
1915	4.36	4.34	1.41	.86	7.29	1.91	9.13	4.23	5.06	19.10	2.24	2.21	62.14
1916	1.08	.63	.28	2.59	5.10	6.87	8.31	5.92	4.95	4.58	4.60	3.01	48.52
1917	1.15	1.17	2.41	.56	5.78	3.89	11.17	8.15	8.87	3.55	.19	.92	47.81
1918	3.72	.14	1.72	8.24	2.11	5.37	12.30	3.34	6.60	7.25	2.30	3.23	56.32
1919	3.01	4.25	5.68	1.17	10.37	5.19	11.49	5.46	2.38	.80	3.99	3.45	57.24
1920	1.08	4.85	.72	6.72	6.67	5.89	7.49	5.35	13.96	1.55	3.62	2.23	60.13
1921	.52	1.76	.87	1.51	7.07	6.62	6.46	4.13	1.93	10.57	3.28	2.91	47.63
1922	1.06	1.38	1.27	.10	5.88	9.75	4.84	9.38	7.78	6.95	.75	2.06	51.20
1923	.56	.27	2.63	.83	10.42	12.36	7.54	5.85	5.79	3.73	.17	1.45	51.60
1924	3.08	5.31	7.36	4.02	2.56	8.99	13.37	3.96	6.14	9.58	.15	1.71	66.23
1925	5.87	1.46	1.89	1.02	4.78	5.67	6.83	10.30	2.55	1.93	1.74	7.96	52.00
1926	4.03	1.67	5.51	4.67	.57	11.36	9.50	5.35	7.04	1.00	3.66	.48	54.84
1927	.11	1.71	2.30	.62	.47	3.84	9.03	5.71	4.13	3.89	.74	1.29	33.84
1928	.79	.89	4.07	8.97	3.77	4.06	7.71	10.89	13.22	.91	.37	.69	56.34
1929	1.38	.34	1.30	2.13	7.37	6.01	12.49	8.03	11.52	3.84	1.63	1.41	57.45
1930	1.38	2.47	12.46	4.41	2.31	13.31	7.05	5.36	4.25	1.12	0.72	5.02	59.86
1931	2.50	1.32	6.29	2.77	3.83	2.27	5.10	6.03	2.78	1.11	0.11	3.59	37.70
1932	1.52	0.11	3.47	0.25	9.05	7.75	3.58	4.93	2.67	0.95	4.93	0.18	39.39
1933	2.17	3.58	2.54	4.33	2.41	8.20	5.46	9.18	14.10	3.94	1.72	0.41	59.04
1934	1.04	3.37	3.33	4.58	8.18	13.35	9.00	1.27	3.14	1.50	0.09	0.55	60.52
1935	1.37	2.79	0.70	2.26	2.42	2.37	9.13	7.61	9.79	4.07	0.85	4.81	48.17
1936	1.06	6.29	2.87	1.58	3.58	11.28	3.63	4.93	5.81	5.07	2.21	1.77	50.08
1937	0.97	5.00	2.97	3.78	4.47	5.22	5.14	13.14	9.37	4.55	2.42	0.82	57.85
1938	0.73	0.81	1.74	0.34	6.30	4.49	4.81	4.36	5.30	3.88	1.49	0.30	34.55
1939	1.21	0.35	1.75	4.97	4.87	15.64	6.34	8.90	5.24	1.67	0.39	1.09	52.42
1940	2.14	2.89	4.23	4.44	1.72	6.67	10.14	8.04	7.35	0.37	0.22	5.81	54.02
1941	4.69	4.16	2.47	5.53	2.73	8.18	9.44	6.46	4.76	5.33	3.61	2.29	59.65
1942	2.32	3.03	5.83	2.32	1.17	10.57	2.01	6.71	4.17	0.24	0.12	2.80	41.29
1943	1.61	0.57	4.52	1.60	4.83	3.66	9.08	7.50	11.66	2.56	0.77	1.04	49.40
1944	1.92	0.05	4.31	2.31	2.83	6.43	11.04	5.39	4.52	8.53	0.11	T	48.85
1945	3.86	0.11	0.54	1.47	0.75	13.70	7.06	5.28	15.87	1.61	1.00	2.52	55.95
1946	2.24	2.96	1.15	.81	4.24								

appears to be no tree disease affecting citrus crops which has blighted large groves.

Life of the Trees. Citrus trees have long life, seedling trees fifty or more years old being regarded as being in their very prime. The budded trees do not attain their maximum production before thirty-five years.

Summary. Citrus groves in Central Florida thus appear to be very stable investments insofar as stability of yield, resistance to disease, and longevity are concerned. In terms of physical yield the crop is remarkably stable because the fairly steady distribution of rainfall and the average warm temperature of Central Florida.

Prices of Citrus Crops. It is the relatively low prices of citrus crops which prevailed throughout most of the ten year period from 1931 to 1941 which is the bugaboo to citrus growers. Will the low prices of the 1930s return again? That is the question. There are two vital factors which will greatly influence future citrus prices. The first is the level of the national income. The second is the trend in the aggregate consumption of citrus crops in the form of fresh fruits, canned fruits and juices and concentrates.

As Fig. 1 and Table 14 show, the prices of citrus fruits fluctuate with the national income, dropping sharply in depressions. Since the freight charges, and the picking, packing, and fertilizer costs remain about the same the net return to the grower fluctuates even more than the gross price, dropping from $1.15 a box for oranges in 1929-30 to 14 cents a box in the depression of 1932-33, rising again to $1.06 a box in the prosperous year 1936-1937 and falling to 20 cents a box in the depressed season of 1938 to 1939. With the rapid rise in the national income during the war, the gross price of oranges per box rose from $1.37 in 1939-1940 to $3.17 in 1944-1945 and the net return to the growers from 17 cents to $1.73 a box, an increase of ten fold in the same period.*

Table 14

PERCENTAGE OF NATIONAL INCOME RECEIVED BY CITRUS GROWERS
(Millions of Dollars)

Year	*National Income*	*Season*	*Value of Citrus to Growers*	*Citrus Percent of National Income*
1929	83,326	1929-30	158	0.19
1930	68,858	1930-31	106	0.15
1931	54,479	1931-32	87	0.16
1932	39,963	1932-33	69	0.17
1933	42,322	1933-34	94	0.22
1934	49,455	1934-35	99	0.20
1935	55,719	1935-36	119	0.21
1936	64,924	1936-37	135	0.21
1937	71,513	1937-38	96	0.13
1938	64,200	1938-39	87	0.14
1939	70,829	1939-40	106	0.15
1940	77,574	1940-41	141	0.18
1941	96,857	1941-42	183	0.19
1942	122,232	1942-43	308	0.25
1943	149,392	1943-44	395	0.26
1944	160,653	1944-45	421	0.26
1945	160,500	1945-46	396	0.25

The effect of increasing the national citrus crop 50 percent from 1938 to 1944, while prices tripled, was to increase the total value of the United States citrus crop four times, as Tables 15 and 16 show. Here was the extraordinary concurrence in agriculture of both record yields and good prices. And yet there is strong evidence for the view that this is not a temporary war phenomena but a more or less permanent trend to higher levels of both citrus production and prices. This is due to the fundamental relationship between citrus prices and the national income which will prevail in the future as it has in the past.

In the period from 1931 to 1940, the national income dropped as low as 40 billion dollars, and at no time exceeded 78 billion dollars. As the result of the expenditure of 300 billion dollars for war, our national income rose to 160 billion dollars in 1944 and it remained at that level in 1945 despite reconversion.

Table 15

TOTAL U. S.

	Oranges and Tangerines		*Grapefruit*		*Value of all Citrus Fruits*
	Boxes (thousands)	Value (thousands of dollars)	Boxes (thousands)	Value (thousands of dollars)	(thousands of dollars)
1909-10	17,539	18,035	1,119	1,712	25,245
1910-11	20,678	24,393	1,236	1,640	32,420
1911-12	19,223	23,834	1,214	3,432	33,245
1912-13	13,570	19,675	2,085	2,749	27,270
1913-14	25,888	26,162	2,307	3,962	34,164
1914-15	25,407	27,632	2,539	1,590	32,302
1915-16	23,647	34,817	2,559	3,190	46,043
1916-17	27,015	35,943	2,688	4,013	48,270
1917-18	12,267	42,296	2,227	4,102	58,230
1918-19	24,315	68,300	3,880	7,999	87,681
1919-20	24,809	77,114	6,295	10,049	93,633
1920-21	33,385	62,136	6,234	10,161	86,355
1921-22	22,668	66,736	7,103	10,924	89,070
1922-23	32,569	63,827	8,289	9,748	86,673
1923-24	38,300	55,212	9,023	5,208	68,689
1924-25	29,960	85,391	9,693	9,306	110,902
1925-26	34,755	92,694	8,550	16,695	123,015
1926-27	39,635	99,906	9,753	12,647	126,821
1927-28	32,736	122,116	8,920	18,762	159,519
1928-29	56,218	92,176	13,236	14,011	127,544
1929-30	31,829	114,171	11,215	21,211	157,716
1930-31	55,060	74,431	18,690	13,613	105,563
1931-32	49,902	61,029	15,181	12,215	87,283
1932-33	51,615	45,367	15,004	8,737	68,548
1933-34	47,174	63,949	14,672	12,126	93,978
1934-35	63,988	71,898	21,347	11,669	99,088
1935-36	52,073	77,838	18,347	16,175	118,743
1936-37	54,538	93,619	30,670	17,625	134,582
1937-38	74,285	60,991	31,133	17,709	96,047
1938-39	78,531	57,979	43,594	12,529	87,192
1939-40	75,742	70,487	35,192	15,338	105,504
1940-41	85,510	100,619	42,883	18,522	140,569
1941-42	85,163	131,738	40,261	31,998	182,920
1942-43	89,349	213,556	50,481	58,073	307,910
1943-44	106,651	272,193	56,090	85,545	394,860
1944-45	113,010	287,449	52,130	87,932	421,073
1945-46	106,720	263,332	62,530	85,335	396,137

Wages and compensation of employees have risen from 48 billion dollars in 1940 to 116 billion dollars last year. There is now in the hands of the American people, a savings fund of 157 billion dollars. There is suf-

*Florida State Marketing Bureau. Annual Fruit and Vegetable Report 1944-45 Season. pp. 64-65.

Fig. 1

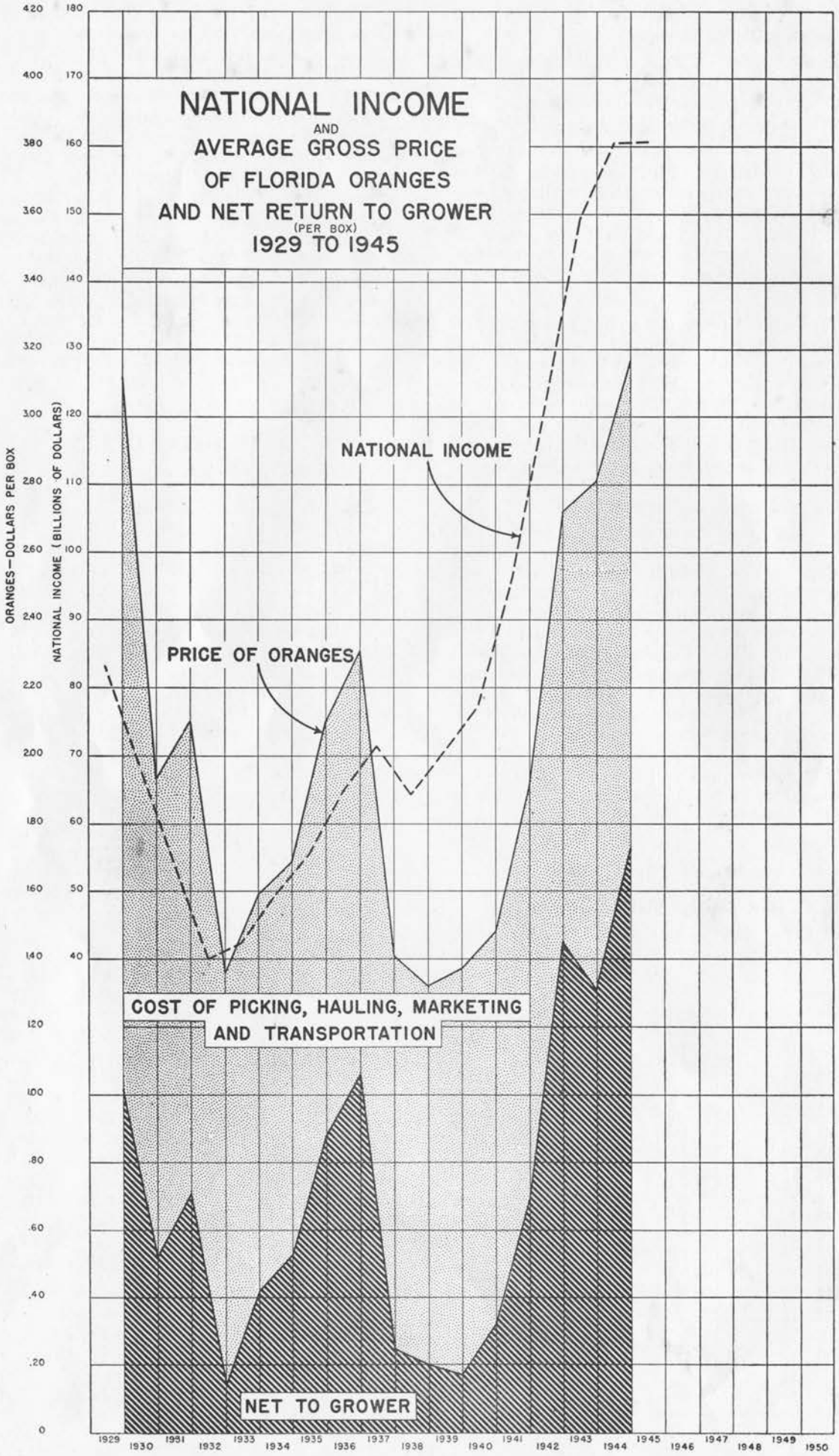

NATIONAL INCOME
AND
AVERAGE GROSS PRICE
OF FLORIDA ORANGES
AND NET RETURN TO GROWER
(PER BOX)
1929 TO 1945
ORANGES—DOLLARS PER BOX
NATIONAL INCOME (BILLIONS OF DOLLARS)
NATIONAL INCOME
PRICE OF ORANGES
COST OF PICKING, HAULING, MARKETING
AND TRANSPORTATION
NET TO GROWER
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
.80
.60
.40
.20
0
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950

Table 16

PRICES AND VALUES OF CITRUS CROPS, BY STATES

	Season Average Return per Box Received by Growers		*Value of Production*	
	1944	1945	1944	1945
Oranges				
California	2.78	2.70	$163,761,000	$138,510,000
Florida	2.53	2.20	108,369,000	110,000,000
Texas	2.49	2.39	10,956,000	10,575,000
Arizona	2.98	2.80	3,427,000	3,472,000
Louisiana	2.60	2.50	936,000	775,000
5 States	2.67	2.47	$287,449,000	$263,332,000
Tangerines				
Florida	2.52	3.00	$ 9,828,000	$ 12,000,000
Grapefruit				
Florida	1.91	1.40	$ 42,596,000	$ 44,800,000
Texas	1.42	1.25	31,666,000	28,750,000
Arizona	1.59	1.05	5,962,000	4,725,000
California	2.04	2.00	7,708,000	7,060,000
4 States	1.74	1.43	$ 87,932,000	$ 85,335,000
Lemons				
California	2.74	2.50	$ 34,614,000	$ 34,750,000
Limes				
Florida	5.00	3.60	$ 1,250,000	$ 720,000
Total Citrus in United States			$421,073,000	$396,137,000
Percent National Income			0.26	0.25
Total Citrus in Florida			$162,043,000	$167,520,000
Total Citrus in California			$206,083,000	$180,320,000

ficient deferred demand for automobiles, refrigerators, radios, housing, etc. to sustain production at a high level for the next five years. As a result of the continuation of inflationary trends in wages and prices, with possibly only a minor set-back of a few months in prospect in the immediate future, the national income will probably be maintained at an average level of 160 billion dollars or more until 1951. During this period it is probable that orange prices will be sustained at approximately present levels, because citrus fruits are being consumed by all classes of wage earners as the best source of indispensable Vitamin C "sunshine" vitamin, so necessary to the health of babies as well as adults.

The sums received by citrus growers all over the United States is only one-fourth of one percent of the national income and the price paid at retail for all citrus products is less than one percent of the national income, which is relatively a small amount to pay for what is becoming an indispensible part of the diet of the American people.

What are the prospects for citrus prices after 1951? At that time, when the pent-up demand for goods is largely filled, and there is a decline in the number of young people reaching marriageable age due to the low birth rates following 1929, there may be a recession in business activity. At the same time many new orange groves may come into bearing and the total production of citrus crops in Florida will have increased from the present 86,000,000 boxes annually to over 125,000,000 boxes. At that time there may be some decline in citrus prices from present levels. It seems highly improbable, however, that citrus prices will ever again fall to the low levels of the 1930s. The reason is that it is highly improbable that the national income can ever again be permitted to sink below 100 billion dollars even in the bottom of the worst depression because we will have debt charges and federal governmental expenses amounting to over 25 billion dollars annually. Once wages rise, they seldom decline and since wages constitute 70 percent of our national income we cannot keep wages high without a high level of national employment and income.

Moreover, the demand for oranges, grapefruit and tangerines will continue to grow because more wage earners have incomes high enough to afford them, and because they will be made available to more people in the form of canned juice and concentrates. Hence, the increase in the demand will tend to absorb the increased production of oranges at a fair level of prices.

As already indicated, all of the increased demand for oranges must be met by Florida production because the California orange crop will not appreciably increase. The increased output of canned citrus fruits and orange concentrates will make more of the Florida citrus juices available for summer drinks.

Even if the net returns to the grower are not as great as in the past four years, however, the total amount of money received by people employed in canning, packing, picking, cultivating and fertilizing citrus

crops will increase because of the increased yields. Hence the citrus industry in Central Florida has long term prospects of expansion and will tend to support increasing numbers of people in the Orlando area. The answer to our $64 question is that the Orlando region can look forward confidently to the long term expansion of the citrus industry in terms of total physical crops and also in terms of dollars received for those crops and the number of people supported by the citrus industry in all its branches. Yet powerful as it is now, the citrus industry is but one of a number of strong economic background factors supporting the growth of the Orlando region.

The Cattle Industry. The rapid recent growth of the cattle industry in Florida is a shining example of how new breeds and new methods can reap the advantage of Florida's vast potential land resources. Fifteen years ago, much of Central Florida was practically an open range on which roamed an inferior breed of cattle. The introduction of Brahman stock from India, a breed with sweat glands which enabled them to fatten on natural pasture in hot weather, and a breed which had become immune to ticks and diseases affecting cattle in warm climates resulted in a great improvement in the size and quality of Florida cattle. When the Brahman was crossed with Herefords to produce the Braford, a new breed was evolved which was ideally adapted to the Florida climate. Braford calves for veal matured 30 to 60 days earlier than the native stock, and were 30 to 40 percent heavier. Hand in hand with the development of new breeds came the improvement of pastures, a trend still in its infancy. While it required as much as 30 or 40 acres of wild land to support one head of cattle, permanent pasture would support as many as 3 or 4 cows to the acre. Since Florida has abundant rainfall and a year round grazing season, it will be profitable to develop thousands of acres in permanent pasture and thereby vastly increase the number of beef cattle raised in Florida. Florida now raises first class veal but the lack of native grain and hay has retarded the production of first class beef. The use of dried orange peel and pulp from the canneries, however, furnishes a local fodder for cattle and also utilizes a by-product of the citrus industry.

The rapid growth of the cattle industry has been facilitated by the rise of auction markets for cattle, the pioneer and largest one of which is at Kissimmee—nicknamed "Cow-Town" in Osceola County, about 15 miles south of Orlando. Local packing plants have likewise contributed to the growth of the industry.

The importance of the cattle industry to Orlando is indicated by the fact that within a radius of 62 miles from Orlando there are approximately one-fifth of the cattle of Florida's total of 1,205,000 which has the highest rate of increase in the nation. The total annual cash income to the cattle industry within the Orlando trade area is approximately $2,846,000 and the value of the herds is $11,514,168. This includes the livestock used for breeding, milk-producing and improvement of the strains. Approximately 35,000 cattle raised in the trade area are slaughtered annually, and this accounts for $1,250,000 of the $2,846,000 annual cash income from cattle in the trade area.

The cattle industry in Central Florida has exceptionally good prospects for further rapid growth because of both national and local reasons. The rise in the national level of wages, with minimum wages guaranteeing a higher standard of living even to unskilled workers, has greatly increased national meat consumption. With the rapid future growth of Florida's own population, there will be a greatly increased local demand for veal and beef. Florida has the best prospects for increasing its veal and beef production both by continuing to improve its breeds which will increase the size and quality of its cattle and by developing great tracts of its cheap land into permanent pastures, which will support 10 to 100 times as many cattle as at present. The continued rapid growth of canning citrus fruits and the development of concentrates will likewise furnish more fodder as a by-product. Other cattle areas have already attained virtually their maximum cattle production because there is less opportunity for further improvement of breeds on western ranges and because the grazing potential in the west is absolutely limited by scant rainfall.

At the same time there is a bright future for the dairy industry in Central Florida as the increasing population and the increased per consumption both augment the demand for milk and butter.

Crops other than citrus. While the acreage in citrus crops constituted 87.5 percent of all the crop acreage in the entire 10 county Orlando trade area in 1945, the great variety of vegetables now being raised in the Orlando region indicate great possibilities for further expansion of truck crops. As Table 17 shows, Seminole, Marion and Sumter Counties had large acreage in vegetables. Celery is a leading crop in Seminole County, with 3,850 acres in celery in 1944-1945. Watermelons are an important crop in Lake County, with 6,500 acres, and also in Marion (3,000 acres) and Sumter (2,100 acres) Counties. In the entire region there were 4,600 acres planted in cabbages, 2,625 acres in snap beans, 1,125 acres in cucumbers and 1,000 acres in peppers.

The Orlando region has a substantial proportion of the State's total acreage in celery (48.4 percent), watermelons (30 percent), cabbage (26.6 percent), lettuce (23.2 percent), eggplant (15.5 percent), peppers (15 percent) and cucumbers (14.6 percent). (See Table 19).

Of the individual counties, Sumter has the greatest proportion of acreage in vegetables and watermelons with virtually no citrus. Seminole had 6,050 acres in vegetables and 8,250 acres in citrus in 1944-1945. Marion County had 6,025 acres in vegetables and watermelons and 10,138 acres in citrus. Osceola is chiefly a cattle county with few vegetable crops. (See Table 17).

Polk with 89,000 acres in citrus out of 90,000 acres in crops is almost entirely devoted to oranges, grapefruit and tangerines. Orange County has over 40,000 acres in citrus, compared with 4,000 acres in vegetables. Lake County has 33,000 acres in citrus, but also 6,500 acres in watermelons and 2,000 acres in vegetables. Volusia, Brevard and Indian River Counties have few vegetable crops, and most of their crops are citrus or respectively 15,920, 15,848 and 12,205 acres in citrus. (See Table 18).

The great diversity of vegetable crops in the Orlando 10 county trade area, which were planted on 33,000 acres, indicates the variety of crops which can be raised. Total acreage in vegetables can be greatly increased when the demand of a growing population requires it, because there is ample land area with abundant rainfall which is not now used for crops.

Table 17

ACREAGE OF ALL CROPS IN ORLANDO TRADE AREA, 1944-45

	Immediate Area					
	Orange	*Lake*	*Seminole*	*Osceola*	*Brevard*	*Total*
Snap Beans	750	400	300	50		1,500
Cabbage	1,100	600	1,200	100	200	3,200
Celery	950	350	3,850			5.150
Cucumbers	150	200				350
Eggplant	25	100				125
Escarole	225		350			575
English Peas	50		100			150
Lettuce	25		100			125
Peppers	75	100				175
Potatoes	300	50	150			500
Tomatoes	75	325			200	600
Total Vegetables	3,725	2,125	6,050	150	400	12,450
Strawberries	25					25
Watermelons	100	6,500				6,600
Total Mis. Fruits	125	6,500				6,625
Total Vegetables and Mis. Fruits	3,850	8,625	6,050	150	400	19,075
Oranges	33,320	24,100	6,660	4,360	11,540	79,980
Grapefruit	4,060	7,200	770	960	3,840	16,830
Tangerines	3,044	1,944	820	585	468	6,861
Total Citrus	40,424	33,244	8,250	5,905	15,848	103,671
Total Crops	44,274	41,869	14,300	6,055	16,248	122,746

Source: Florida State Marketing Bureau: Annual Fruit & Vegetable Report, 1944-45 Season.

Table 18

ACREAGE OF ALL CROPS IN ORLANDO TRADE AREA

	Fringe Counties					
	Polk	*Marion*	*Sumter*	*Volusia*	*Indian River*	*Total*
Snap Beans	50	500	475			1,025
Lima Beans		400				400
Cabbage	400	500	200	300	50	1,450
Celery		200				200
Cucumbers	50	225	500			775
Eggplant		125	150			275
Escarole		50				50
English Peas		100				100
Lettuce		200				200
Peppers	200	125	500			825
Potatoes	50			150		200
Tomatoes	100	450	1,250		575	2,375
Total Vegetables	850	2,875	3,075	450	625	7,875
Cantaloupes		150	25			175
Strawberries	200		75			275
Watermelons	150	3,000	2,100	50	100	5,400
Total Mis. Fruits	350	3,150	2,200	50	100	5,850
Total Mis. Fruits and Vegetables	1,200	6,025	5,275	500	725	13,725
Oranges	55,630	8,970		12,560	4,870	82,030
Grapefruit	27,840	770		1,440	6,820	36,870
Tangerines	5,457	398		1,920	515	8,290
Total Citrus	88,927	10,138		15,920	12,205	127,190
Total Crops	90,127	16,163	5,275	16,420	12,930	140,915

Table 19

PERCENTAGE OF FLORIDA ACREAGE IN EACH CROP IN ORLANDO TRADE AREA 1944-45

	5 County Immediate Trade Area Percent of State	10 County Total Area (Acres)	Percent of State Total
Snap Beans	1.9	2,625	3.3
Lima Beans	—	400	8.3
Cabbage	19.0	4,650	26.6
Celery	46.8	5,350	48.4
Cucumbers	4.5	1,125	14.6
Eggplant	4.0	500	15.5
Escarole	20.5	625	22.3
English Peas	5.8	250	9.6
Lettuce	9.0	325	23.2
Peppers	1.9	1,000	15.0
Potatoes	1.6	700	2.3
Tomatoes	1.8	2,975	9.1
Total Vegetables	6.0	20,525	10.0
Cantaloupes	—	175	35.0
Strawberries	1.2	300	14.1
Watermelons	17.0	12,000	30.1
Total Mis. Fruits	16.0	12,475	30.0
Total Vegetables and Mis. Fruits	7.7	33,000	13.4
Oranges	31.2	162,010	63.2
Grapefruit	17.5	53,700	56.0
Tangerines	29.3	15,151	64.6
Total Citrus	27.6	230,861	61.4
Total Crop Acreage	19.8	263,861	42.4

Possibilities for the Further Extension of Agriculture in the Orlando Trade Area. The Central Florida area, of which Orlando is the hub, offers more opportunity for a rapid growth of agricultural crops than other regions of the United States. Notwithstanding its extraordinary combination of abundant sunshine, a year-around growing season and an annual rainfall averaging over 50 inches a year, only 3.6 percent of the land in the five counties in the immediate trade area of Orlando is in harvested crops. (See Table 20). The State of Florida itself is practically the same size as the State of Iowa, yet in 1939 the latter had approximately thirteen times as great an acreage under crops as Florida. Florida with only 1,680,000 acres in crops in 1939 or 4.84 percent of its land area may be compared with Iowa's 20,077,000 acres of harvested crop land, or 58 percent of its area. If Florida were a desert or in the polar regions, such a small amount of crop land might be understandable, but in view of its abundant rainfall and sunshine, the only explanation of its low crop acreage is that Florida is the last frontier of the United States, practically the only zone in which a great expansion in agricultural production can still take place. The increase of beef and dairy cattle production by planting permanent pasture, the expansion of the crops devoted to every variety of vegetables, the planting of relatively new crops like tung oil in the north of Florida and ramie in central Florida, may be expected to constantly increase the agricultural production of Florida. Not limited by the water supply like California, or by the shortness of the growing season like Canada, Florida in general and particularly Central Florida may be expected to have a growth in many crops such as has characterized orange production in the past few decades.

Industrial Expansion. While the chief economic support of the Orlando region has been its citrus crops, and its income from tourists and retired families, the Orlando region has also expanded its industries. The canning of citrus fruits and the new industry of making concentrates of oranges in powdered form has not only directly given employment to thousands but by absorbing increasing quantities of fruit, it has enabled citrus production to expand without glutting the market. It has also provided an increasing amount of stock feed in the form of dried orange peel and pulp for the expanding cattle industry. Canning and concentrates both may be expected to grow and to give increased employment seven months in the year from November to June. Approximately half of the workers in the canneries and packing establishments are women. It is a mistake to assume, however, that the women working in canneries would be available for jobs from July to October. Most of them are housewives who want to return to their household duties in the summer months.

There is however, a relative surplus of male labor in the Orlando region, which should attract many types of new industries, particularly consumer goods industries supplying local markets. As the population of Central Florida increases, the market for manufactured goods for the local population will correspondingly increase. Just as in California, where em-

Table 20

PERCENTAGE OF TOTAL ACREAGE IN CROPS IN COUNTIES IN TRADE AREA OF ORLANDO 1944-45 SEASON (acres)

	Total	Citrus Crops	Total Crops	Percent Acreage in Crops
Immediate Trade Area				
Orange	635,520	40,424	44,529	7.0
Seminole	222,080	8,250	15,296	7.0
Brevard	820,480	15,848	16,146	2.0
Lake	736,640	33,244	41,575	5.6
Osceola	934,830	5,905	6,005	0.6
Total in Immediate Trade Area	3,369,600	103,671	123,551	3.6
Fringe Counties				
Volusia	794,240	15,920	16,572	2.1
Indian River	336,000	12,205	13,079	4.0
Marion	1,039,360	10,138	19,791	1.9
Polk	1,274,880	88,927	91,107	7.1
Sumter	366,080	2,150	7,540	2.0
Total Fringe Counties	3,810,560	129,340	148,089	3.9
Total Trade Area	7,180,160	233,011	271,640	3.8

Source: For total acreage State of Florida—Florida Agricultural Statistical Report, 1941.
For crops acreage—Florida State Marketing Bureau Annual Fruit and Vegetable Report, 1944-45 Season.

ployment in local industries has expanded to meet the needs of the residents so Florida factory production should expand just to meet the needs of people within the State.

The labor rates in the Orlando region compare favorably with other regions, being considerably lower than in the North as the following wage rates prevailing in April 1946 indicate:

Unskilled Workers	50 to 75 cents an hour
Skilled Workers	90 cents to $1.20 an hour
Clerical Workers	$18 to $25 a week
Stenographers	$25 to $45 a week
Carpenters	$1.12½ an hour
Painters	$1.37½ an hour
Plumbers	$1.65 an hour
Electricians	$1.50 an hour
Bricklayers	$1.75 an hour
Plasterers	$1.75 an hour

Operating costs for factories would be lowered also by low expense of fuel for heating, by relatively low taxes, and by cheap land.

Growth of Bank Deposits, Retail Trade and Buying Power in Orlando Region

Bank Deposits. The Counties in the Orlando region, as a result of good returns in its citrus crops and other favorable factors stand near the highest in the nation in the rate of growth of bank deposits from 1940 to 1945. Excluding Federal Savings and Loans the bank deposits in the Orlando Trade Area rose from $46,331,437 in 1940 to $211,001,944 in 1945, an increase of 355.7 percent.* In Orlando alone the bank deposits rose from $17,194,400 in 1940 to $70,478,312 in 1945, a gain of 310 percent. This far exceeded the rate of growth of bank deposits throughout the nation, which increased slightly more than 100 percent in the same period.

Buying Power. As Table 21 indicates, the buying power of the immediate five county trade area of Orlando increased from $71,186,000 in 1939 to $194,890,00 in 1945, an increase of 174 percent compared with an average gain of 132 percent for the nation in the same period. The effective buying power of the entire ten county trading area of Orlando rose from $151,419,000 in 1939 to $385,735,000 in 1944 and to $419,541,000 in 1945, a rise in purchasing power of $268,122,000 since 1939.

Retail Sales. As Table 23 shows, retail sales in Orlando alone rose from $26,300,000 in 1939 to $51,000,000 in 1945 notwithstanding shortages of goods and complete lack of new cars, refrigerators, radios and many other hard goods. As Table 22 shows retail sales in the ten county trade area rose from $109,378,000 in 1939 to $211,241,000 in 1945 but as more goods become available, retail sales will rise to their normal proportion of 70 percent of total buying power which will increase retail sales in the total ten county trading area to something like $270,000,000 in 1946. This means $161,000,000 more dollars will be spent in the stores of the Orlando trade area in 1946 than in 1939.

Orlando as a Center for Retired People. In addition to its powerful economic base derived from citrus production, Orlando has the same winter climate which has made such resorts as St. Petersburg so attractive to retired people and to tourists. Orlando has the added appeal of its beautiful lakes and the cultural advantages of Rollins College. With average daily minimum temperatures of 52 to 53 in December, January and February, compared with 31 to 35 in Chicago and Detroit, 37 to 41 in New York and Boston for the same months, and with 60 percent of the possible sunshine compared with 28 to 45 percent for Chicago and Detroit in these three winter months, Orlando offers the salubrious Central Florida climate

Table 21

EFFECTIVE BUYING INCOME OF COUNTIES IN ORLANDO TRADE AREA, 1939-1945

Immediate Trade Area

(thousands of dollars)

	1939	1940	1941	1942	1943	1944	1945
Orange	38,042	44,849	50,777	64,804	89,728	103,153	112,456
Lake	12,520	11,760	12,314	15,716	22,398	27,048	28,491
Seminole	10,134	9,947	9,662	12,331	13,768	22,878	24,944
Brevard	7,352	8,167	9,247	11,801	13,033	18,784	20,474
Osceola	3,138	3,399	3,848	4,911	7,900	7,818	8,525
Total Immediate Trade Area	71,186	78,122	85,858	109,563	146,827	179,681	194,890
Fringe Counties							
Polk	34,107	40,210	45,525	58,102	76,163	92,483	100,824
Marion	10,094	11,900	13,473	17,195	20,881	27,370	29,839
Sumter	2,662	2,138	2,421	3,090	4,244	4,917	5,364
Volusia	30,389	31,827	34,034	43,436	46,542	73,202	79,815
Indian River	2,981	3,514	3,978	5,077	7,498	8,082	8,809
Total Fringe Counties	80,233	89,589	99,431	126,900	155,328	206,054	224,651
Total Trade Area	151,419	167,711	185,279	236,463	302,155	385,735	419,541
Florida	763,998	900,915	1,019,999	1,330,355	1,760,001	2,105,486	2,225,035
United States	67,783,307	74,182,000	91,119,967	114,069,867	142,075,097	148,415,957	153,644,688
Percent Florida	19.8	18.6	18.2	17.8	17.2	18.3	18.9
Percent United States	0.22	0.23	0.20	0.21	0.21	0.26	0.27

Source: Sales Management

*Tabulated by the Orlando Sentinel Star.

Table 22

RETAIL SALES IN COUNTIES IN ORLANDO TRADE AREA, 1939-1945

Immediate Trade Area

(thousands of dollars)

	1939	1940	1941	1942	1943	1944	1945
Orange	31,510	34,666	36,398	37,243	41,154	48,841	60,862
Lake	7,010	7,712	8,097	6,285	6,632	10,866	13,543
Seminole	5,189	5,709	5,994	6,133	7,093	8,045	10,029
Brevard	5,366	5,903	6,198	5,342	6,174	8,324	10,366
Osceola	2,144	2,359	2,477	2,535	2,486	3,317	4,136
Total Immediate Trade Area	51,219	56,349	59,164	57,538	63,539	79,393	98,936
Fringe Counties							
Polk	27,297	30,031	31,532	28,264	30,650	42,315	52,726
Marion	7,734	8,509	8,934	9,141	9,801	11,982	14,926
Sumter	1,262	1,388	1,457	1,491	1,741	1,953	2,430
Volusia	19,364	21,303	22,348	22,887	21,759	30,008	37,389
Indian River	2,502	2,753	2,891	2,958	3,210	3,875	4,834
Total Fringe Counties	58,159	63,984	67,162	64,741	67,161	90,133	112,305
Total Trade Area	109,378	120,333	126,326	122,279	130,700	169,526	211,241
Florida	614,464	676,209	710,002	736,357	825,083	949,103	1,245,400
United States	42,038,448	45,776,285	54,299,981	56,400,449	63,318,363	68,850,695	74,528,981
Percent Florida	17.8	17.8	17.8	16.6	15.8	17.9	17.0
Percent United States	0.26	0.26	0.23	0.22	0.21	0.25	0.28

Source: Sales Management

Table 23

RETAIL SALES IN ORLANDO IN 1939 AND 1945

	U. S. Census 1939	*Estimate 1945*
Food	$ 3,764,000	$ 7,500,000
Department Stores	5,125,000	15,000,000
Variety Stores	4,632,000	12,000,000
New and Used Cars	5,168,000	4,000,000
Restaurants	1,154,000	2,500,000
Furniture	1,512,000	3,000,000
Hardware	1,057,000	2,000,000
Lumber and Building Hardware	1,454,000	2,500,000
Tires and Accessories	912,000	1,500,000
Gasoline and Filling Stations	1,521,000	1,000,000
	$26,299,000	$51,000,000

to residents of the eastern half of the United States which contains four-fifths of the population and wealth of the nation.

People from these northern cities can now commute back and forth to Central Florida over weekends as present airplane schedules have cut the time to five hours and future schedules will reduce the time to four and even three hours. Tens of thousands more will come for longer visits in trains and private automobiles.

Central Florida presents the advantages to the retired couple, living on savings or a pension, of lower living costs. Because of lower heating costs and the homestead exemption, a couple can live in a modest home for $10 a month less than in the same home in New York or Chicago and they can make further savings on clothing and food because heavy overcoats are not needed and local fresh fruits and vegetables are cheaper and more abundant than in northern markets.

The demand for homes for retired people in the United States will increase tremendously in the next few decades because of two powerful factors; first, the increase in the number and proportion of older persons in the population and second, the great increase in savings, pensions and social security in recent years, which enable more people who have reached retirement age to live on their savings or on pensions.

The number of persons in the United States who were from 65 to 74 years old increased from 3,223,034 in 1920 to 4,452,455 in 1930 and to 5,899,501 in 1940. Taking the present population and assuming medium mortality rates, there were 6,964,000 in that age group (from 65 to 74) in 1945 and there will be 7,538,000 in 1950, 9,529,000 in 1960 and 10,775,000 in 1970. In other words in the next 25 years there will be nearly twice as many persons in the age group ready for retirement as in 1940. At the same time, the number who were 75 years old and over which was 1,469,704 in 1920, 1,913,196 in 1930 and 2,643,125 in 1940 will increase to 3,388,000 by 1950, to 4,069,000 by 1960 and to 5,105,000 by 1970. Whereas the persons 65 years of age and over amounted to only 6.8 percent of our population in 1940, and 7.1 percent of our national population in 1945, they will represent 7.9 percent in 1950, 10.2 percent in 1960 and 11.9 percent in 1970. Hence, the demand for retired people for homes in mild climates will increase at an accelerated rate in the future.

Savings and Pensions. The means to satisfy this desire of old people to retire is likewise being supplied at an accelerated rate. The great increase in pension funds for city and state employees, for employees of many corporations and the emphasis upon the Federal

Social Security Plan, which will be extended to cover more persons, are evidences of the increasing pressure of a population which is constantly increasing its average age for security in old age. The budget for pensions in New York City alone increased from $2,380,000 in 1909 to $73,342,000 in 1938 and scores of other cities show similar rates of increase. Over 157 billion dollars has been accumulated in savings, the greatest fund of savings ever available in America. These savings to a considerable extent are in the hands of older people. Many men and women have secured extra funds because under the pressure of war demands they have been working past the normal retirement age. There has been a great increase in the rate of retirement since V-J Day.

Orlando will inevitably attract an increasing number of retired families if it merely provides homes for them, because of the great expansion in the total number of older persons in the United States. If Orlando desires to secure an even greater share of retired families, than would normally come, it can do so by providing more recreation facilities for persons in the form of parks, shuffle-board courts, libraries, concerts, lectures and indoor recreation centers. These facilities would likewise attract younger people and tourists who are more interested in cultural advantages than in horse racing and night clubs.

II. INCREASE IN POPULATION AND EMPLOYMENT IN ORLANDO TRADE AREA.

Population Growth. The rate of population growth in the past has a vital bearing on the future economic prospects of a region insofar as it measures the strength of the basic economic forces which support the area. Population grows rapidly when the resources of a community are being developed and its employment is expanding. Hence, the rates of population growth in the Orlando trade area have great significance in our survey to determine the future demand for housing. As Table 24 shows, the rate of population growth of Orange County has outstripped that of every other county in its immediate five county trade area since 1920, with gains of 150 percent from 1920-1930, 41 percent from 1930-1940, and 24 percent in the five year period from 1940 to 1945. Orange County's rate of population increase since 1920 also surpassed that of the counties in the fringe area, except that of Polk County in the last five year period, which had a slightly higher rate of gain. This indicates that Orange County and Orlando are increasing in relative importance as the dominant trade center of the region. The high rate of gain in the major citrus counties, Orange, Polk and Lake since 1900, was due to the rapid expansion of citrus production in that period. Orange County's greater rate of growth than its surrounding trade area reflects its rise as the leading financial, wholesale trade and marketing headquarters for the citrus industry and its growing importance as a center for retired people. The further growth of citrus production will thus insure Orange County's future substantial population growth.

Increase in the Number of Families in the Orlando Region. Of great significance in estimating the future housing demand is the fact that because of the decline in the average size of families, the number of families is increasing faster than population. Thus as Table 25 indicates, while the population of Orange County increased 41 percent from 1930 to 1940, the number of families rose 47.5 percent as a result in the decline in the size of the average family in Orange County from 3.59 to 3.43 percent. (See Table 29). This is a factor which must be taken into account in all estimates of future housing requirements and in our estimates of the future growth of the Orlando region, we have made predictions both for total population and number of families.

Table 24

PERCENT OF INCREASE OF POPULATION OF COUNTIES IN ORLANDO TRADE AREA, 1890-1945

	1890-1900	1900-1910	1910-1920	1920-1930	1930-1940	1940-1945
Immediate Trade Area						
Orange)				150.0	41.0	24.0
Seminole)	–2.0	67.5	61.6	67.0	21.2	10.0
Lake	–6.7	27.2	34.1	82.4	17.4	2.3
Brevard	51.7	–8.6	80.9	56.3	20.8	20.9
Osceola	11.1	60.0	30.8	48.6	–5.4	4.5
Fringe Trade Area						
Polk	57.9	93.1	60.4	86.6	20.0	29.6
Marion	17.3	10.4	–11.0	23.3	5.5	12.6
Volusia	17.7	65.1	43.8	82.7	25.5	9.0
Sumter	14.6	8.0	17.2	35.8	3.7	0.8
Indian Riv.	—	—	—	—	33.5	1.2

Employment in the Orlando Region. It is employment which in the last analysis makes population growth possible. Every community must have a basic means of support, or it must produce goods and services for the benefit of people living outside its area, so that it will have funds to purchase the goods such as automobiles, clothing, food, etc., which it does not itself produce. In the case of Orlando these basic supports are chiefly the citrus industry and the income from retired people, although the vegetable crops, cattle, retail and wholesale trade, and some industries are important contributing factors.

The importance of citrus is indicated by the fact that in the five county trade area of Orlando alone, it is estimated that 5,000 persons are required to take care of the groves, that 7,000 are employed seven months of the year in packing citrus fruits, 2,000 are engaged in picking during the season and 3,500 are working in the canneries.

It is of vital importance in predicting the future growth of any region to ascertain in what types of industries its present population is employed. It is necessary from this present employment as a base to show how any future population increase will be supported.

Accordingly in Table 26 is presented the data showing at what types of jobs the gainfully occupied persons in Orange, Lake, Osceola, Seminole and Brevard were employed in 1940. To determine the labor force of any community one must first deduct from the total population, the persons under 14 years of age who are too young to work, those who have retired, those over 14 years old who are still in school or unable to work, and housewives. In Orange County 44 percent of the population in 1940 or 30,872 persons were in

Table 25

COMPARISON OF GROWTH IN POPULATION AND FAMILIES IN ORLANDO, WINTER PARK AND COUNTIES IN TRADE AREA OF ORLANDO

	Population		*Families*		*Percent Increase 1930-1940*	
	1930	1940	1930	1940	*Population*	*Families*
Orlando	27,330	36,736	7,780	10,742	34.4	38.1
Winter Park	3,686	4,715	1,040	1,450	28.0	39.4
Orange County rural non-farm	13,826	19,563	3,775	5,656	41.5	49.8
Orange County (Total)	49,732	70,074	13,852	20,413	41.0	47.5
Lake County	23,161	27,255	6,440	8,003	17.7	24.3
Seminole County	18,735	22,304	5,043	6,239	19.0	44.8
Brevard County	13,283	16,142	3,761	4,918	21.5	30.6
Osceola County	10,699	10,119	3,198	3,202	−5.4	−0.1
	115,610	145,894	32,294	42,775	26.2	32.5

the labor force,—that is, they were either employed or seeking jobs and of this number 27,272 were employed. In the other four counties of the immediate trade area where fewer women were in the labor force, the percentage of the total population in the labor force was 42.3 in 1940. Orange County in 1940 had 2,272 more women than men, and one-third of these in the labor force in Orange County. No other county in the region had so large a proportion of gainfully employed women.

In Table 26 it will be noted that in Orange County in 1940, 3,588 were engaged in agriculture, 2,041 in various types of manufacturing and 2,463 in wholesale trade. Orange County's importance as a financial and real estate center was indicated by the 1,180 employed in finance, insurance and real estate. Orlando with one quarter of the population of the five counties had over half of the five county total in real estate and finance. (See Table 27). Its importance as a retail center was indicated by the fact that it had 45 percent of the clerical and sales force of the five counties. Other lines of activity in which Orlando had more than its pro-rata share of 25 percent of the five county total employment was utilities 48.8 percent of the men, business and repair 46.7 percent of the men, hotels and lodging places 40 percent, laundering 41 percent of the men, 56 percent of the women, and utilities 48.8 of the men and 52.5 percent of the women. Of course since 1940 there have been marked increases in most lines of employment in Orlando and Orange County but no government census on occupations since 1940 has been made.

Prediction of Future Population and Employment. From this detailed break-down of the types of employment in the Orlando region in 1940 it is necessary to make a prediction of the future growth of employment which will sustain the demand for homes in the next ten years. Obviously it is impossible to know with absolute accuracy what employment there will be in each industry and trade in Orange County in 1950 or 1955. We do know however, that employment in certain basic activities is almost certain to increase. As the production of citrus crops in Florida increases from the present 86,000,000 boxes into 150,000,000 boxes by 1955 and as a greater proportion of the crop is canned or reduced to concentrates more persons will be required in picking, packing, grove care, canning and in the preparation of concentrates. It is estimated that in the five county Orlando region alone, the number required to take care of groves will increase from 5,000 to 7,000, the number engaged in packing will rise from 7,000 to 12,000, the number required in picking will increase from 2,000 to 3,500 and the number in canneries and in orange concentrate factories will rise from 3,500 to 10,000. This is a rise in employment in these phases of citrus—not to mention financing, management, and shipping from 15,500 to 32,500—or over 100 percent. The increase in citrus production will also require an increase in the number employed in trucking, railroads and other shipping. In addition there is almost certain to be a great increase in the number of retired people coming to the Orlando region, attracted by its lakes, beautiful home areas and cultural advantages. Further, the growth of many vegetable crops is an almost certain outgrowth of increased demand for vegetables from the North and for the expanded population of the region. The growing cattle industry of Osceola County will likewise increase employment. There are many opportunities for existing industries to expand and for many new ones to enter the Orlando region. All these basic activities increasing the number of jobs and population will give rise to an increased employment in service lines, in retail stores, the professions, utilities, restaurants, hotels and local government.

In Table 28 we have indicated how much employment may be expected in the Orlando region in 1950 and 1955. We estimate that the total employment in Orange County will increase from the 27,272 of 1940 and the estimated 35,000 of today to 54,000 in 1950 and 62,000 in 1955. This will support a population of 122,000 in Orange County in 1950 and 140,000 in 1955. It is estimated that the total employment in the five counties will increase from 55,000 in 1940 and the 66,000 of 1945 to 96,000 in 1950 and 106,500 in 1955, which will support a five county population—now 169,000—of 220,000 in 1950 and 250,000 in 1955.

We have predicted a more rapid rate of gain from

Table 26

POPULATION, LABOR FORCE AND NUMBER OF EMPLOYED WORKERS IN EACH INDUSTRY GROUP IN ORLANDO TRADE AREA—1940

Counties in Immediate Trade Area

	ORANGE		LAKE		OSCEOLA		SEMINOLE		BREVARD		TOTAL	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Total Population	33,901	36,173	13,553	13,702	5,118	5,001	11,234	11,070	8,175	7,967	71,981	73,913
Persons 14 years old and over	26,550	28,933	10,358	10,458	4,116	4,002	8,495	8,389	6,335	6,169	55,854	57,951
In Labor Force	20,740	10,132	7,909	2,634	2,776	851	6,842	3,081	4,908	1,835	43,175	18,533
Employed	18,408	8,864	6,941	2,294	2,424	690	6,293	2,841	4,385	1,615	38,451	16,304
On public emergency work	723	367	315	132	147	76	243	130	217	89	1,645	794
Seeking work	1,609	901	653	208	205	85	306	110	306	131	3,079	1,435
Not in Labor Force	5,810	18,801	2,449	7,824	1,340	3,151	1,653	5,308	1,427	4,334	12,679	39,418
Engaged in housework	99	13,673	122	5,835	12	2,496	15	3,867	15	3,235	263	29,106
In school	2,148	2,304	863	1,010	292	259	715	714	503	521	4,521	4,808
Unable to work	1,629	1,436	741	587	536	249	534	491	409	320	3,849	3,083
In institutions	171	45	72	8	28	34	141	10	77	2	489	99
Other and not reported	1,763	1,343	651	384	472	113	248	226	423	256	3,557	2,322
Employed Workers by Major Occupation	18,408	8,864	6,941	2,294	2,424	690	6,293	2,841	4,385	1,615	38,451	16,304
Professional	835	1,025	248	311	84	85	167	191	149	136	1,483	1,748
Semi-professional	175	57	50	12	15	9	30	6	38	9	308	93
Farmers and farm managers	767	69	675	43	228	13	480	37	345	43	2,495	205
Proprietors and officials except farm	2,545	441	745	144	262	66	665	85	601	128	4,818	864
Clerical, Sales	2,860	1,879	609	384	180	113	488	291	352	230	4,489	2,897
Craftsmen, foremen	2,396	66	632	5	301	4	561	9	429	6	4,319	90
Operatives	2,461	999	766	267	307	78	1,128	592	543	165	5,205	2,101
Domestic service	457	2,971	121	769	8	176	51	627	67	623	704	5,166
Service, except domestic	1,343	1,145	310	240	104	127	227	183	234	221	2,218	1,916
Farm laborers	2,384	116	1,671	73	231	3	1,753	744	819	20	6,858	956
Laborers, except farm	2,007	31	995	13	664	3	689	49	758	4	5,113	100
Not reported	178	65	119	33	40	13	54	27	50	30	441	168
Employed Workers by Industry Group	18,408	8,864	6,941	2,294	2,424	690	6,293	2,841	4,385	1,615	38,451	16,304
Agriculture	3,371	217	2,476	174	502	25	2,367	923	1,225	70	9,941	1,409
Forestry	155	—	109	9	34	—	89	6	209	3	596	18
Construction	1,629	25	469	2	291	—	196	5	558	5	3,143	37
Food	593	61	35	11	50	36	90	28	41	15	859	151
Logging	95	—	72	—	31	—	44	—	18	—	260	—
Sawmills, Planing mills	213	—	517	3	527	4	188	3	71	1	1,516	11
Furniture (mfg.)	221	40	135	10	2	—	74	17	7	—	439	67
Printing and publishing	229	58	50	11	28	3	34	9	30	6	371	87
Chemicals (mfg.)	182	16	32	1	12	—	40	1	25	—	291	18
Stone, clay, glass (mfg.)	79	1	8	—	—	—	2	—	5	2	94	3
Iron and steel (mfg.)	53	2	—	—	—	—	2	1	1	—	56	3
Non-ferrous metals (mfg.)	18	—	6	1	1	—	—	—	2	1	33	2
Machinery (mfg.)	128	3	14	—	2	—	9	—	21	—	174	3
Other industry	99	11	23	3	—	—	61	1	26	3	209	18
Railroads	214	6	114	4	72	—	393	4	119	2	912	16
Trucking service	237	4	58	—	12	—	40	2	47	—	394	6
Other transportation	145	7	21	1	6	—	75	1	41	1	288	10
Communication	147	85	22	30	5	4	18	23	14	18	205	160
Utilities	369	25	54	4	27	—	79	7	51	4	580	40
Wholesale trade	1,882	581	495	148	98	19	972	463	302	96	3,749	1,307
Food, dairy retail	818	187	233	62	97	26	222	57	172	50	1,542	382
Eating and drinking	439	438	74	101	37	51	68	100	96	139	714	829
Motor Vehicles	680	59	231	15	72	6	147	6	191	12	1,321	98
Other retail	1,553	861	326	137	104	45	277	110	223	97	2,483	1,250
Finance, insurance and real estate	800	360	146	49	35	15	105	29	89	26	1,175	499
Automobile, Storage, Repair	443	12	95	3	34	3	70	2	75	—	717	20
Business and repair, except automobile	250	53	41	4	11	—	28	1	23	—	353	58
Domestic service	638	3,095	150	807	24	195	68	651	109	643	989	5,391
Hotels and lodging places	272	401	77	88	36	60	46	44	94	90	525	683
Laundering, cleaning and dyeing	209	288	45	48	10	14	35	20	36	28	335	398
Miscellaneous personal services	240	263	65	70	29	28	50	55	54	52	438	468
Amusement, recreation, and related	250	44	118	11	13	6	61	10	50	5	492	76
Professional and related	952	1,409	269	389	94	118	181	236	147	169	1,643	2,321
Government	617	143	200	67	92	23	112	33	149	39	1,170	305
Industry not reported	195	86	105	11	26	8	44	15	60	34	430	154

Source: U. S. Census of Population—1940. Second Series—Florida

Table 27

NUMBER OF EMPLOYED WORKERS IN EACH INDUSTRY GROUP IN ORLANDO AND PERCENTAGE IN EACH GROUP OF TOTAL IN ORANGE COUNTY AND 5 COUNTY TRADE AREA—1940

	Number Orlando		*Percent Orange County*		*Percent 5 County Trade Area*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Total Population	17,233	19,503	50.8	53.9	24.0	26.4
Persons 14 years old and over	13,937	16,122	52.5	55.7	25.0	27.8
In labor force	10,944	6,358	52.8	62.8	25.3	34.3
Employed (except on public emergency work)	9,690	5,676	52.6	64.0	25.2	34.8
On public emergency work	334	182	46.2	49.6	20.3	22.9
Seeking work	920	500	57.2	55.5	29.9	34.8
Not in labor force	2,993	9,764	51.5	51.9	23.6	24.8
Engaged in own home housework	66	6,832	6.7	50.0	25.1	23.5
In school	1,095	1,215	50.9	52.7	24.2	25.3
Unable to work	720	826	44.2	57.5	18.7	26.8
In institutions	81	22	47.4	48.9	16.6	22.2
Other and not reported	1,032	869	58.5	64.7	29.0	37.4
Employed workers by major occupation—						
Professional	536	653	64.2	63.7	36.1	37.4
Semi-professional	117	46	66.9	80.7	38.0	49.5
Farmers and farm managers	87	2	11.3	2.9	3.5	1.0
Proprietors, managers, and officials, except farm	1,618	274	63.6	62.1	33.6	31.7
Clerical, sales, and kindred workers	2,001	1,295	70.0	68.9	44.6	44.7
Craftsmen, foremen and kindred workers	1,210	44	50.5	66.7	28.0	48.9
Operatives and kindred workers	1,308	447	53.1	44.7	25.1	21.3
Domestic service workers	274	2,034	60.0	68.5	38.9	39.4
Service workers, except domestic	1,031	826	76.8	72.1	46.5	43.1
Farm laborers and farm foremen	514	8	21.6	6.9	7.5	.8
Laborers, except farm	896	11	44.6	35.5	17.5	11.0
Occupation not reported	98	36				
Agriculture	661	16	19.6	7.4	6.6	1.1
Forestry	—	—	—	—	—	—
Construction	859	17	52.7	68.0	27.3	45.9
Food and kindred products (mfg.)	408	47	68.8	77.0	47.5	31.1
Logging	18	—	18.9	—	6.9	—
Sawmills and planing mills	59	—	27.7	—	3.9	—
Furniture, store fixtures, misc. wooden goods (mfg.)	60	7	27.1	17.5	13.7	10.4
Printing, Publishing and allied industries	141	23	61.6	39.7	38.0	26.4
Chemicals and allied products (mfg.)	110	8	60.4	50.0	37.8	44.4
Stone, clay, and glass products (mfg.)	66	1	83.5	100.0	70.2	33.3
Iron and steel and their products (mfg.)	30	1	56.6	50.0	53.4	33.3
Nonferrous metals and their products (mfg.)	14	—	77.8	—	42.4	—
Machinery (mfg.)	90	2	70.3	66.7	51.7	66.7
Other industries	63	9	63.3	81.8	30.1	50.0
Railroads	116	3	54.2	50.0	12.7	18.8
Trucking	126	1	53.2	25.0	32.0	16.7
Other transportation	106	6	73.1	85.7	36.8	60.0
Communication	110	59	74.8	69.4	53.4	36.9
Utilities	283	21	76.7	84.0	48.8	52.5
Wholesale Trade	829	121	44.0	2.4	22.1	1.1
Food and dairy products, retail	496	103	60.6	55.1	32.2	27.0
Eating and drinking places	333	310	75.9	70.8	46.6	37.4
Motor vehicles, accessories and filling stations	462	32	67.9	54.2	35.0	32.7
Other retail trade	1,063	633	68.4	73.5	42.8	50.6
Finance, insurance, and real estate	628	309	78.5	81.3	53.4	61.9
Automobile storage, rental, and repair services	243	5	54.9	41.7	33.9	25.0
Business and repair services, except automobile	165	35	66.0	66.0	46.7	60.3
Domestic Service	347	2,107	54.4	68.1	35.1	39.1
Hotels and lodging places	193	303	71.0	75.6	36.8	44.4
Laundering, cleaning and dyeing services	137	222	65.6	77.1	40.9	55.8
Miscellaneous personal services	173	202	72.1	76.8	39.5	43.2
Amusement, recreation, and related services	178	29	71.2	65.9	36.2	38.2
Professional and related services	561	887	58.9	63.0	34.1	38.2
Government	436	95	70.7	66.4	37.3	31.1
Industry not reported	1,121	60	62.1	69.8	28.1	39.0

Table 28

ESTIMATED NUMBER OF PERSONS EMPLOYED IN ORANGE COUNTY AND ORLANDO TRADE AREA—1940 TO 1955

	Orange County				*5 County Trade Area*			
	1940	1945	1950	1955	1940	1945	1950	1955
Population	70,074	86,782	122,000	140,000	145,894	169,189	220,000	250,000
Labor Force	30,872	38,000	55,000	63,000	61,708	70,500	97,000	108,000
Total Employed	27,272	35,000	54,000	62,000	54,755	66,000	96,000	106,500
Agriculture	3,588	5,000	6,000	62,000	54,755	66,000	96,000	106,500
Forestry	155	200	200	200	614	700	800	800
Construction	1,654	1,700	5,000	4,000	3,180	3,200	7,000	5,000
Manufacturing—								
Food (Canning, etc.)	593	2,000	3,500	4,000	1,010	3,500	6,000	8,000
Logging	95	100	200	200	260	300	400	400
Sawmills, planing mills	213	400	800	600	1,537	2,000	4,000	3,000
Printing and publishing	287	350	500	600	458	600	900	1,000
Chemicals	198	200	300	400	309	300	500	600
Metals	73	100	200	300	94	150	400	500
Stone, Clay, Glass	80	100	400	300	97	150	600	500
Machinery	131	200	500	700	177	250	700	800
Furniture	261	300	800	1,000	506	600	1,500	1,500
Other Industry	110	200	400	600	227	300	800	800
Total Manufacturing	2,041	3,450	7,600	8,700	4,675	7,650	15,800	17,100
Railroads	220	300	400	500	928	1,000	1,200	1,500
Trucking Service	241	500	700	1,000	400	500	1,000	1,500
Other Transportation	152	200	500	1,000	298	350	1,000	2,000
Communication	232	250	500	700	366	400	800	1,000
Utilities	394	400	600	700	620	700	1,000	1,200
Wholesale trade	2,463	4,000	5,000	6,000	5,056	8,000	9,000	10,000
Food, dairy retail	1,005	1,400	2,000	2,100	1,924	2,500	3,000	3,500
Eating and drinking	877	1,200	2,000	2,500	1,543	2,000	3,000	3,500
Motor Vehicles	739	800	2,000	2,000	1,419	1,500	3,500	3,500
Other retail	2,414	2,500	3,500	4,000	3,730	4,000	5,000	6,000
Finance, Insurance and real estate	1,180	1,400	1,800	2,000	1,674	1,700	2,500	2,700
Automobile, storage, repair	445	500	1,000	1,500	737	750	1,750	2,000
Business and repair except automobile	303	350	700	800	411	450	1,000	1,200
Domestic Service	3,733	4,000	5,000	5,500	6,380	6,500	9,000	10,000
Hotels and lodging places	673	1,000	1,500	2,000	1,408	1,600	2,250	3,500
Laundering, cleaning and dyeing	497	700	1,000	1,200	733	900	1,500	1,800
Miscellaneous personal services	503	600	1,000	1,200	906	900	1,500	1,800
Amusement and recreation	294	350	600	700	568	700	1,000	1,200
Professional and related services	2,361	3,000	4,000	5,000	3,964	4,000	6,000	7,000
Government	760	800	900	1,000	1,475	1,500	1,600	1,700
Industry not reported	281	400	600	700	484	500	800	1,000

1945 to 1950 than from 1950 to 1955 because we believe national business conditions will be extremely favorable in the next five years and that there is a possibility of a depression in the ensuing five years from 1950 to 1955.

This prediction of future population is thus based on the number of jobs which the Orlando region can offer, and not upon an automatic projection of past population trends. As Table 28 shows gains in employment in agriculture, food canning and processing, wholesale trade and trucking are predicated upon the growth of the citrus industry. The rapid population growth itself will give rise to greater construction employment and more jobs in logging, sawmills, stone, clay and glass to meet the need for homes and to more work in furniture factories. Greater tourist trade and more retired people will augment employment in hotels, laundering, amusements, and personal services. All the factors increasing population will cause a rise of employment in retail trades, utilities, professional services and domestic service. The employment in each separate line is indicated in Table 28. Of course, there will be many deviations from these figures. New industries not now anticipated may come to the Orlando region, and many other factors may change the exact figures here set down. This item by item check of the Orlando region's future employment does show a solid and substantial basis for marked population growth, however, and it is believed, that if some lines fail to show the gains here indicated, other lines will exceed the estimates, so that the overall employment is a conservative estimate for the future.

Table 29

PROJECTED POPULATION AND NUMBER OF FAMILIES IN COUNTIES IN ORLANDO TRADE AREA 1940 TO 1955

County	*Population*				*Families*			
	1940	1945	1950	1955	1940	1945	1950	1955
Orange	70,074	86,782	122,000	140,000	20,413	25,300	36,000	42,400
Lake	27,255	27,946	31,000	34,000	8,003	8,195	9,100	10,000
Seminole	22,304	24,560	29,000	32,000	6,239	6,880	8,300	9,400
Brevard	16,142	19,339	26,000	31,000	4,918	5,897	8,000	9,700
Osceola	10,119	10,562	12,000	13,000	3,202	3,343	3,900	4,300
Total	145,894	169,189	220,000	250,000	42,775	49,615	65,300	75,800

AVERAGE SIZE OF FAMILIES IN COUNTIES IN ORLANDO TRADE AREA—1930 TO 1955

	Actual			*Estimated*	
	1930	1940	1945	1950	1955
Orange	3.59	3.43	3.43	3.40	3.30
Lake	3.59	3.41	3.41	3.40	3.28
Seminole	3.72	3.57	3.57	3.50	3.42
Brevard	3.53	3.28	3.28	3.25	3.20
Osceola	3.35	3.16	3.16	3.10	3.00

NUMERICAL INCREASE IN POPULATION AND FAMILIES IN COUNTIES IN ORLANDO TRADE AREA 1940 TO 1955

County	*Population*				*Families*			
	1930-40	1940-45	1945-50	1950-55	1930-40	1940-45	1945-50	1950-55
Orange	20,337	16,708	35,218	18,000	6,561	4,887	10,700	6,400
Lake	4,094	691	4,054	3,000	1,563	192	905	900
Seminole	3,569	2,254	4,440	3,000	1,196	641	1,420	1,100
Brevard	2,858	3,197	6,661	5,000	1,157	979	2,103	1,700
Osceola	580	443	438	1,000	4	141	547	400
Total	30,278	23,293	50,811	30,000	10,481	6,840	15,675	10.500

These population estimates based on employment may now be compared with the past trends of population for the counties in the Orlando region. The predicted gain of 40 percent for the population of Orange County for the five year period from 1945 to 1950 is greater than the 24 percent gain from 1940 to 1945 but it is believed Orange County will actually have a greater rate of gain during the prosperous post-war period when thousands of new homes can be built than during the war period 1940 to 1945 when only 1,200 new houses were built in Orlando. The predicted ten year gain in population from 1940 to 1950 for Orange County would be 71 percent, which would be much higher than the 41 percent gain from 1930 to 1940. From 1930 to 1940, however, citrus prices were low during most of the period and the national rate of growth was very slow. It is calculated that Orange County will have a greater rate of growth from 1940 to 1950 than in the preceding decade because of the prospects for expansion of the citrus industry at profitable prices. A 71 percent rate of increase for Orange County from 1940 to 1950 would still be less than one-half of the 150 percent increase for the period 1920 to 1930.

The rate of predicted population increase for Orange County from 1945 to 1950 is also greater than the predicted rate of increase for Seminole, Lake, Brevard and Osceola Counties in the same period. This is in keeping with Orange County's greater rate of growth in the past and its prospects of increasing its dominating position as a center for the citrus industry and as a retail and cultural center. Nevertheless, it is estimated that the other counties will all have greater rates of population gain from 1945 to 1950 than from 1940 to 1945; Lake County 11 percent compared with 2.3 percent; Seminole 18 percent compared with 10 percent; Brevard County 35 percent compared with 21 percent and Osceola County 13 percent compared with 4.5 percent.

Increase in the Number of Families. As already indicated the number of families will increase faster than purchasing power because it is estimated that the average size of the family in Orange County will decrease from 3.43 in 1945 to 3.40 in 1950 and to 3.30 in 1955. Applying this family size to the predicted population we find that the number of families in Orange County will increase from 25,300 in 1945 to 36,000 in 1950 and to 42,400 in 1955. This means 10,700 more families in Orange County in the next five years and 17,100 more families in ten years. (See Table 29). This is the fundamental basis for estimating the housing demand for the Orlando region.

Applying the ratios for decreasing family size in

the other four counties (see Table 29) gives a total increase in the number of families in the Orlando five county trade area from 49,615 in 1945 to 65,300 in 1950 and 75,800 in 1955. This is a total gain of 15,685 families in the five counties in the next five years and 26,185 families in the next ten years.

The housing demand of the Orlando metropolitan area, however, will be chiefly determined by the increase in the number of families in Orange County and hence to be on the conservative side these figures —an increase of 10,700 families in the next five years and 17,100 families in ten years will be taken as the basis for estimating the housing demand.

Population of the City of Orlando and Winter Park. In this report no attempt has been made to predict the future employment and population of the areas within the City Limits of Orlando and Winter Park because the population of these cities will spread beyond the corporate limits in all directions in the metropolitan area. Orlando is the center of an urban region which will constantly expand, so that the number residing just inside the municipal boundaries is not significant compared with the total population which will make Orlando its chief employment, shopping and recreation center.

It is important to note, however, that the rate of growth of Orlando from 9,282 in 1920, 27,330 in 1930 and 36,736 in 1940 to 50,105 in 1945, a gain of 90 percent since 1930 and of 36.5 percent in the last five years is outstripping the rate of increase of all the urban and rural communities in its immediate trade area. From 1930 to 1940, the urban population of Orange County increased 43.5 percent, that of Lake County only 9.6 percent, Osceola County 2 percent and Seminole County 1.2 percent. At the same time the urban population of Polk County gained 23.2 percent, that of Marion County 23.4 percent and that of Volusia County 30.9 percent.

The population of Winter Park increased from 1,078 in 1920, 3,686 in 1930, 4,715 in 1940 to 5,386 in 1945.

While Lakeland and Bartow in Polk County showed slightly greater rates of gain for the period 1940 to 1945 than Orlando, Orlando has gained more rapidly than any other city in its trade area for the entire period from 1930 to 1945, as Table 29-A shows.

The urban region which has its center at Orlando is thus gaining an increasing proportion of the urban population of its trade area.

III. RENTS AND INCOME IN THE ORLANDO REGION

To estimate the demand for new homes it is necessary not merely to calculate the increase in the number of families but also to determine how many families can afford to buy new homes. Consequently we must ascertain the number of families in each income and rental group in the Orlando region today and make an estimate of the number in each income group in 1950 and 1955.

In 1940, of all the urban and rural non-farm dwelling units in Orange County, 50.8 percent had a rental value of less than $20 a month, and only 2,300 units or 10.9 percent had a rental value of $50 a month or more as Tables 30, 31 and 31-A show. The situation in the four counties of Lake, Osceola, Brevard and Seminole was even worse for there 71.7 percent of the non-farm dwelling units had a rental value of less than $20 a month and only 3.6 percent were worth over $50 a month.

While there was thus a high proportion of low rental quarters in the entire Orlando trade area, there was a concentration of the higher valued homes in Orlando and Winter Park. Orlando and Winter Park with 32.6 percent of the urban dwelling units in the five counties had only 10.9 percent of the urban units with a rental value of $10 or less, and from 55 to 72 percent of all the rental units renting for $30 a month or more as Table 32 shows. This means that there is a concentration of the higher income urban population of the region in Orlando and Winter Park although

Table 29-A

POPULATION OF CITIES IN ORLANDO TRADE AREA—1920 TO 1945

City	*County*	1920	1930	1940	1945	*Percent Increase* 1940-1945
Orlando	Orange	9,282	27,330	36,736	50,105	36.4
Winter Park	Orange	1,078	3,636	4,715	5,586	18.5
Lakeland	Polk	7,062	18,554	22,068	31,461	42.6
Bartow	Polk	4,203	5,269	6,158	8,721	41.7
Lake Wales	Polk	796	3,401	5,024	6,210	23.6
Winter Haven	Polk	—	7,130	6,199	8,109	30.8
Haines City	Polk	651	3,037	3,890	5,132	31.9
Clermont	Lake	496	1,086	1,631	1,558	-4.5
Eustis	Lake	1,193	2,835	2,930	3,281	12.0
Mount Dora	Lake	725	1,613	1,880	1,850	-1.6
Kissimmee	Osceola	2,722	3,163	3,225	4,010	24.3
Cocoa	Brevard	1,445	2,164	3,098	4,022	30.0
Melbourne	Brevard	1,142	3,118	3,332	4,010	20.3
Sanford	Seminole	5,588	10,100	10,217	12,497	22.3
Ocala	Marion	4,914	7,281	8,986	10,242	14.0
Daytona Beach	Volusia	—	16,598	22,584	25,311	11.2
DeLand	Volusia	—	5,246	7,041	7,245	3.0
Vero Beach	Indian River	793	2,268	3,050	3,629	19.0

Source: U. S. Census—1940—Florida First Series. Florida State Census—1945.

Table 30

NUMBER OF URBAN AND RURAL NON-FARM DWELLING UNITS AND DISTRIBUTION BY RENTAL VALUE IN ORLANDO, WINTER PARK AND THE COUNTIES IN THE IMMEDIATE TRADE AREA OF ORLANDO—1940

Contract or Estimated Monthly Rent	*Orlando*	*Winter Park*	*Orange County*	*Lake County*	*Seminole County*	*Brevard County*	*Osceola County*	*Total*
All dwelling units	12,251	1,800	21,414	7,604	5,800	4,992	3,283	43,093
Number reporting rent	12,062	1,776	21,159	7,526	5,751	4,944	3,146	42,526
Under $10	1,284	265	4,364	3,494	3,240	1,910	1,205	14,213
$10 to $14	1,739	315	3,650	1,040	782	699	644	6,815
$15 to $19	1,631	129	2,756	806	529	497	499	5,081
$20 to $24	1,550	145	2,350	607	349	489	321	4,116
$25 to $29	1,467	102	2,062	567	351	459	288	3,767
$30 to $39	1,894	150	2,405	525	269	381	121	3,701
$40 to $49	994	134	1,273	204	107	177	33	1,794
$50 to $59	634	155	918	139	73	167	21	1,318
$60 to $74	352	154	554	49	21	71	5	700
$75 to $99	298	66	397	32	11	71	7	518
$100 and over	219	161	430	63	19	23	2	537
Average monthly rent	$27.80	$39.31	$24.22	$14.94	$12.28	$17.50	$13.14	—
Median monthly rent	$23.94	$26.17	$19.15	$10.79	$ 7.61	$13.52	$12.36	—

Source: U. S. Census—1940—Housing Second Series—Florida (p.62)

Table 31

NUMBER OF URBAN AND NON-FARM DWELLING UNITS IN EACH RENTAL GROUP IN ORLANDO, WINTER PARK, AND 4 COUNTY TRADE AREA, 1940

Contract or Estimated Monthly Rent	*Orlando*	*Winter Park*	*Orange County*	*4* Counties*
Total dwelling units	12,251	1,800	21,414	21,679
Under $20	4,654	709	10,770	15,339
$20 to $29	3,017	247	4,412	3,471
$30 to $39	1,894	150	2,405	1,296
$40 to $49	994	134	1,273	521
$50 to $74	986	309	1,472	546
$75 to $99	298	66	397	121
$100 and over	219	161	430	107

Table 31-A

PERCENTAGE OF URBAN AND NON-FARM DWELLING UNITS IN EACH RENTAL GROUP IN ORLANDO, WINTER PARK, 1940

Contract or Estimated Monthly Rent	*Orlando*	*Winter Park*	*Orange County*	*4 Counties*
Under $20	38.5	40.0	50.8	71.7
$20 to $29	25.0	13.9	20.8	16.3
$30 to $39	15.7	8.5	11.6	6.0
$40 to $49	8.3	7.5	5.9	2.4
$50 to $74	8.2	17.3	7.0	2.5
$75 to $99	2.5	3.8	1.9	0.6
$100 and over	1.8	9.0	2.0	0.5
	100.0	100.0	100.0	100.0

the wealthier grove and cattle owners living on farms are more widely distributed.

Income Distribution. On the assumption that families normally pay a week's income for a month's rent in the absence of rent control it is possible to make an estimate of the distribution of income of urban families in the Orlando region in 1940. As Tables 33 and 34 indicate, of the 20,413 families in Orange County in 1940, 10,370 or 50.8 percent had incomes of less than $1,000 a year, 6,614 families had incomes of from $1,000 to $1,999 a year, 1,204 families had incomes of from $2,000 to $2,999 a year, 1,817 families had incomes of $3,000 to $4,999 a year and only 408 families had incomes of $5,000 a year or over. Only 2,217 families in Orange County in 1940 could afford to pay $7,500 or more for a home.

Since 1940, however, the national income has more than doubled. In the United States as Table 35 shows, the percentage of families with incomes below $1,000 dropped from 33.2 percent in 1940 to 13.8 percent in 1945, while the percentage with incomes from $3,000 to $4,999 increased from 7.7 percent to 17.8 percent and the percentage with incomes of $5,000 and over increased from 4 percent to 8.8 percent. Likewise in the Orlando region there has been a general shifting upwards in the income levels due to higher wage rates and higher citrus prices. In view of the large amount of seasonal employment for seven months of the year, it is estimated however that 30 percent of the families in Orange County still earn less than $1,000 a year. The rise in the proportion of families in each income group in the Orlando region is shown in Table 34.

It is assumed in the present study that this present percentage ratios of families in each income group will prevail during the next ten years. This is probably conservative because higher wages and prices than those now current may raise family incomes in dollars in the next five years. It is very improbable that wages will be any lower than today, however, so estimating family incomes for the future on the cur-

*Lake, Seminole, Brevard and Osceola Counties. Source: U. S. Census—1940—Housing Second Series—Florida

Table 32

PERCENTAGE OF URBAN AND RURAL NON-FARM DWELLING UNITS IN EACH RENTAL GROUP IN FIVE COUNTY TRADE AREA OF ORLANDO, IN CITY OF ORLANDO, WINTER PARK, AND ORANGE COUNTY—1940

Contract or Estimated Monthly Rental	*Percentage Orlando of 5 Counties*	*Percentage Winter Park of 5 Counties*	*Percentage Orange County of 5 Counties*
All urban dwelling units	28.4	4.2	49.3
Under $10	9.0	1.9	30.7
$10 to $14	25.4	4.6	53.7
$15 to $19	32.0	2.5	54.0
$20 to $24	38.0	3.8	57.0
$25 to $29	39.0	2.7	54.2
$30 to $39	51.0	4.0	60.5
$40 to $49	55.2	7.4	70.7
$50 to $59	48.0	12.0	70.0
$60 to $74	50.0	22.0	79.1
$75 to $99	57.6	12.7	76.5
$100 and over	40.7	30.0	80.0

Source: U. S. Census—1940—Housing Second Series—Florida (p.62)

Table 33

ESTIMATED PERCENTAGE OF FAMILIES IN DIFFERENT INCOME GROUPS — ORANGE COUNTY AND FOUR OTHER COUNTIES IN ORLANDO TRADE AREA— 1940 TO 1945

	Orange County		*Four Counties**	
	1940	1945-1955	1940	1945-1955
Under $1,000	50.8	30.0	71.7	50.0
$1,000 to $1,999	32.4	40.0	22.3	40.0
$2,000 to $2,999	5.9	8.0	2.4	4.0
$3,000 to $4,999	8.9	17.0	3.1	5.0
$5,000 and over	2.0	5.0	0.5	1.0

Table 35

DISTRIBUTION OF ALL UNITED STATES FAMILIES BY INCOME GROUPS 1939 AND 1944

Income Group	*Number 1939*	*% of Total*	*Cumulative %*
TOTAL	34,000,000	100.0	100.0
Over $5,000	1,360,000	4.0	4.0
$3,000-$4,999	2,618,000	7.7	11.7
$2,000-$2,999	6,324,000	18.6	30.3
$1,000-$1,999	12,410,000	36.5	66.8
Under $1,000	11,286,000	33.2	100.0
January 1, 1945			
TOTAL	36,783,000	100.0	100.0
Over $5,000	3,227,929	8.8	8.8
$3,000-$4,999	6,537,222	17.8	26.6
$2,000-$2,999	11,296,648	30.7	57.3
$1,000-$1,999	10,637,128	28.9	86.3
Under $1,000	5,084,073	13.8	100.0

rent distribution would seem to under-estimate rather than over-estimate family purchasing power in dollars.

Applying the ratios of income distribution in Table 33 to the estimated number of families in Orange County, and the other four counties for 1950 and 1955 produces the family income distribution shown in Table 34.

According to this Table there was an estimated increase in Orange County of 1,817 families in the $3,000 to $4,999 income bracket between 1940 and 1945 and 857 families in the $5,000 and over income class. Gains of 1,819 families earning $3,000 to $4,999 a year and 535 families earning $5,000 a year and over in Orange County are predicted from 1945 to 1950. This increase of 5,785 families in groups earning over $3,000 a year from 1940 to 1950 constituted the chief demand for private free enterprise housing. By 1950, it is estimated that there would be approxi-

Table 34

ESTIMATED NUMBER OF FAMILIES IN EACH INCOME GROUP IN ORANGE COUNTY AND FOUR* OTHER COUNTIES IN THE ORLANDO TRADE AREA—1940 TO 1955

	Orange County				*Four Counties*			
	1940	1945	1950	1955	1940	1945	1950	1955
Total Families	20,413	25,300	36,000	42,424	22,362	24,315	29,300	33,400
Under $1,000	10,370	7,590	10,800	12,727	16,034	12,157	14,650	16,700
$1,000 to $1,999	6,614	10,120	14,400	16,970	4,987	9,726	11,720	13,360
$2,000 to $2,999	1,204	2,024	2,880	3,394	537	973	1,172	1,336
$3,000 to $4,999	1,817	4,301	6,120	7,212	693	1,216	1,465	1,670
$5,000 and over	408	1,265	1,800	2,121	112	243	293	334

NUMERICAL INCREASE IN EACH INCOME GROUP

	Orange County			*Four Counties*		
	1940-1945	1945-1950	1950-1955	1940-1945	1945-1950	1950-1955
Under $1,000	-2,780	3,210	1,927	-3,877	2,493	2,050
$1,000 to $1,999	3,506	4,280	2,570	4,739	1,994	1,640
$2,000 to $2,999	820	856	514	436	199	164
$3,000 to $4,999	2,584	1,819	1,082	523	249	205
$5,000 and over	857	535	321	131	50	41
Total	4,587	10,700	6,424	1,953	4,985	4,100

*Lake, Seminole, Brevard and Osceola Counties.

Table 36

NUMBER OF DWELLING UNITS, TYPE OF STRUCTURE, STATE OF REPAIR, ORLANDO, WINTER PARK AND COUNTIES IN IMMEDIATE TRADE AREA—1940

	Orlando	*Winter Park*	*Orange County*	*Lake County*	*Seminole County*	*Brevard County*	*Osceola County*	*5 Counties Total*
All dwelling units	12,251	1,800	23,298	8,994	6,771	5,865	3,771	48,699
All occupied units	10,742	1,450	20,413	8,003	6,239	4,918	3,202	42,775
White	8,112	1,005	15,949	5,784	3,373	3,383	2,570	31,059
Negro	2,629	444	4,462	2,219	2,865	1,533	627	11,706
Percent negro	24.5	30.7	21.9	27.7	45.9	31.2	19.7	27.3
Owner-occupied units	4,599	758	9,818	3,933	2,895	2,460	1,750	20,856
Percent of total occupied	42.8	42.3	48.1	49.1	46.4	50.0	54.7	48.8
Total population, 1940	36,736	4,715	70,074	27,255	22,304	16,642	10,119	145,894
Total population, 1930	27,330	3,686	49,737	23,161	18,735	13,283	10,699	115,610
Population per occupied units, 1940	3.42	3.25	3.43	3.41	3.57	3.28	3.16	3.41
All private families, 1930	7,780	1,040	13,852	6,440	5,043	3,761	3,198	2,294
Population per private family, 1930	3.51	3.54	3.59	3.39	3.72	3.53	3.35	3.58
All dwelling units	12,251	1,800	23,298	8,994	6,771	5,865	3,771	48,699
Type of structure:								
1 family detached	7,591	1,409	16,957	7,729	5,827	4,816	3,166	38,495
1 family attached	295	10	355	35	27	51	8	476
2 family side by side	1,030	38	1,272	202	176	114	88	1,852
2 family other	762	94	1,172	310	256	208	138	2,084
3 family	444	36	636	153	96	93	178	1,056
4 family	656	44	804	112	72	108	120	1,216
1-4 family with business	159	43	354	145	99	189	75	862
5-9 family	716	44	929	226	117	123	75	1,470
10-19 family	162	—	175	43	—	56	—	309
20 family or more	357	71	448	—	22	57	—	527
Other dwelling place	79	11	196	39	45	50	23	363
State of repair and plumbing:								
Not needing major repairs	10,685	1,529	19,888	7,140	5,037	4,770	2,707	39,542
With private bath and private flush toilet	8,368	1,201	13,571	4,036	2,301	2,898	1,600	24,406
With private flush toilet no private bath	719	39	907	192	141	73	98	1,411
With running water, no private flush toilet	1,129	68	1,866	503	283	296	341	3,289
No running water in dwelling unit	469	221	3,544	2,409	2,312	1,503	668	10,436
Needing major repairs	706	197	2,272	1,493	1,529	868	987	7,149
No running water in dwelling unit	115	126	1,203	1,082	1,140	696	825	4,946

mately 8,000 families in Orange County with incomes over $3,000 who should be able to afford new homes if construction costs can be stabilized at a level not over 50 percent above 1940. Since there are now not over 2,500 homes in Orange County in the value class normally occupied by families with such incomes, there is a potential demand of at least 5,000 homes in Orange County by families who can afford to pay for new homes.

The projected increase in the number of families in Orange County in the next five years is however 10,700 families. If 5,000 new homes were built, there would still be a shortage of 5,700 dwelling units without allowing for any undoubling. Yet of the 10,700 possible increase in the number of families in Orange County in the next five years, 8,346 families will be in income brackets who cannot afford new houses without subsidies. Part of these families can be accomodated by filtering up because the houses built for families with incomes over $3,000 will accomodate in about equal proportion families moving out of old quarters and new families requiring homes in Orange County. Approximately 3,000 existing homes might be vacated by families moving out of present houses to new ones. Still there is a possible shortage of over 5,000 dwelling units for lower income groups. The anticipated growth of Orlando may be checked to some extent by lack of housing facilities for families earning less than $3,000 a year.

IV. CHARACTERISTICS OF HOUSING IN ORLANDO REGION

It is necessary to review the characteristics of housing in the Orlando Region before forming conclusions as to the amount of housing needed. The U. S. Census of housing gives very complete information as to the status of housing in the Orlando trade area in 1940, and in view of the small amount of new construction since that time, it presents a fairly good picture of the present housing structure.

Some of the main facts about the housing in the five counties in the Orlando Region are presented in Table 36.

It will be noted that of the 23,298 dwelling units in Orange County in 1940, 20,413 were occupied and

2,885 were vacant. Of the 20,413 occupied units 15,949 were occupied by white families and 4,462 by colored families. Owners occupied 9,818 units or 48.1 percent of all units.

As to type of structure, single family detached homes predominated, 73 percent of the dwelling units in Orange County falling in that category. Most of the two family and multi-family structure in the five counties were in Orange County, however, with approximately 6,000 units in apartments in Orange County, compared with only 2,700 units other than single family in Lake, Seminole, Brevard and Osceola Counties combined. In these last four counties, 21,538 dwelling units or 85 percent of the total dwelling units are in single family detached units.

It is apparent from an examination of Table 36 that Orlando and Winter Park have a concentration of the best dwelling units in the entire five county area. We have already noted the preponderance of the high rental or high value dwelling units in Orlando and Winter Park. The condition of structure also shows the concentration of the better dwelling units of the region in these two localities. Of 12,251 dwelling units in Orlando in 1940, 10,685 did not need major repairs and 8,368 of these had a private bath and private toilet. Likewise of the 1,800 dwelling units in Winter Park, 1,529 did not need major repairs and 1,201 of these had private bath and toilet. On the other hand in Lake, Seminole, Brevard and Osceola Counties combined out of 25,401 dwelling units, 4,877 needed major repairs and of those not needing major repairs, 6,890 had no running water. Only 40 percent of the dwelling units in the four counties outside of Orange were both in good repair and had running water, compared with 68 percent of the dwelling units in Orlando in this superior condition.

The inventory of existing homes in the Orlando trade area, particularly outside of Orlando reveals a very poor stock of housing. There is opportunity here for ultimately replacing 17,500 homes in the five county area either needing major repairs or lacking running water. If average incomes improve, there is thus a tremendous potential market for houses in replacing existing dwellings.

Table 37

NUMBER OF CONSUMERS OF ELECTRICITY AND WATER OF ORLANDO UTILITIES COMMISSION BY CLASSES 1931 TO 1946

(As of January 1 of Each Year)

	ELECTRICITY				
Year	*Residential*	*Commercial*	*Power*	*Refrigeration and Heating*	WATER
1931	5,721	1,752	258		7,232
1932	5,590	1,712	255		7,193
1933	5,428	1,662	247		7,125
1934	5,627	1,670	232	6	7,373
1935	6,081	1,798	247	10	7,724
1936	6,389	1,918	248	16	7,976
1937	6,873	2,009	283	17	8,343
1938	7,315	2,071	316	22	8,729
1939	7,807	2,111	358	26	9,154
1940	8,488	2,220	364	36	9,974
1941	9,280	2,252	380	44	10,729
1942	9,832	2,321	387	45	11,347
1943	10,415	2,103	360	48	11,544
1944	10,906	2,207	382	48	11,868
1945	11,391	2,266	414	49	12,300
1946	11,794	2,416	444	51	12,955

Source: Orlando Utilities Commission

Table 38

TOTAL NUMBER OF TELEPHONES (Residential and Business) IN GREATER ORLANDO* (Excluding Winter Park), 1926-1946

January 1	
1926	4,611
1927	5,867
1928	6,011
1929	6,272
1930	6,054
1931	6,080
1932	5,996
1933	5,392
1934	5,196
1935	5,555
1936	6,043
1937	6,769
1938	7,319
1939	7,869
1940	8,534
1941	9,550
1942	10,381
1943	11,433
1944	13,341
1945	13,645
1946	14,007

Housing Supply and Demand in Orlando, 1940 to 1945. We have made a survey of the changes in the housing demand and supply of the City of Orlando since 1940. The population of the City of Orlando increased from 36,736 in 1940 to 50,105 in 1945. As Table 37 shows, from January 1, 1940 to January 1, 1946, the number of water consumers increased from 9,974 to 12,955, a gain of 2,981. Since there were 10,742 families in Orlando in 1940 when there were 9,974 meters, there are approximately 1.077 families per water meter. The number of families in Orlando accordingly increased from 10,742 in 1940 to 13,945 in January 1946 when there were 12,955 water meters. This is an indicated gain of 3,203 families from 1940 to 1946.

Further evidence of the recent rapid growth of Orlando is the increase in the number of residential consumers at the Orlando Utilities Commission from 5,721 in January 1, 1931 to 8,488 in January 1, 1940 and to 11,794 on January 1, 1946. (See Table 37). The total number of telephones in the City of Orlando and in the area extending nine miles south and west of Orlando increased from 6,054 on January 1, 1930 to 8,534 on January 1, 1940 and to 14,007 on January 1, 1946. (See Table 38).

How was this increased population housed? Vacancies of 1,509 dwelling units existing in 1940 were entirely absorbed, 1,200 new units were built (see Table 40) and at least 500 families doubled up. There has been a great increase also in the rooming house population. Thus with Orlando housing at the saturation point, there is no vacant supply. All of the in-

*Area covered extends north to City limits of Orlando, south and west about nine miles from City limits of Orlando.

Table 39

SEASONAL VARIATION IN NUMBER OF RESIDENTIAL CONSUMERS OF ELECTRICITY IN ORLANDO, FLORIDA, THE YEAR 1940 COMPARED WITH 1945

	1940	*1945*
Jan. 1	8,488	11,391
Feb. 1	8,655	11,418
Mar. 1	8,753	11,451
Apr. 1	8,693	11,445
May 1	8,404	11,409
June 1	8,174	11,339
July 1	7,937	11,233
Aug. 1	7,872	11,204
Sept. 1	7,998	11,204
Oct. 1	8,323	11,315
Nov. 1	8,638	11,502
Dec. 1	8,996	11,702
	1941	*1946*
Jan. 1	9,280	11,794

creased population must be provided for by new building and several thousand quarters in addition should be provided for families now doubled up and to remove from the housing supply structures in very bad repair.

Even seasonal vacancies have been largely eliminated. As Table 39 shows, there was in 1945 practically no variation in the number of monthly consumers of electricity. In 1940, however, the number of consumers of electricity dropped from 8,753 on March 1st, to 7,872 on August 1st—a decline of 881 consumers, which indicated seasonal vacancies.

V. BUILDING PROGRAM FOR THE ORLANDO METROPOLITAN REGION FOR THE NEXT FIVE YEARS

The five years from 1945 to 1950 should be a period of high business activity in the United States, with a tremendous volume of home construction.

Table 40

VALUE—NEW CONSTRUCTION AND ALTERATIONS FOR ORLANDO, FLORIDA, AS INDICATED BY PERMITS—1933 TO 1945

Year	*New*	*Alterations and Repairs*	*Total*
1933	$ 30,880	$150,613	$ 181,493
1934	98,875	269,430	368,305
1935	638,034	294,545	932,579
1936	1,007,235	377,692	1,384,927
1937	1,191,344	378,081	1,569,425
1938	1,410,764	313,911	1,724,675
1939	2,419,230	484,352	2,903,582
1940	2,433,423	374,747	2,808,170
1941	2,352,451	448,340	2,700,791
1942	620,950	134,130	755,080
1943	45,165	127,649	172,814
1944	638,555	252,533	891,028
1945	2,026,915	509,210	2,536,125

Unusual high building costs, due to poor organization of the building industry, black market prices for materials and high premium rates for labor have pushed prices of new homes out of the reach of 90 percent of the families in the United States. There is grave danger that many G.I.'s are now making contracts to purchase homes at prices far above their ability to pay. We believe, however, that some way must be found to reduce the cost of homes to the point where at least two-thirds of the families of the nation can afford to buy them.

We have predicted an increase of 10,700 families in Orange County in the next five years. To provide for at least 1,000 families who are doubled up and to replace a considerable part of the 2,272 structures needing major repairs and some of those in good repair but lacking running water would require a total of over 4,000 additional dwelling units. The total need for new homes in Orange County would thus be 15,000 dwelling units in five years or 3,000 units a year.

Taking into account only those who can afford to buy new homes at stabilized costs not over 50 percent above 1940 levels, it is estimated there will be an effective economic demand for 5,000 new private units in the next five years or 1,000 units a year. This figure of 1,000 dwelling units a year is double the peak of

Table 40-A

NUMBER OF NEW DWELLING UNITS IN ORLANDO—1941 TO 1945

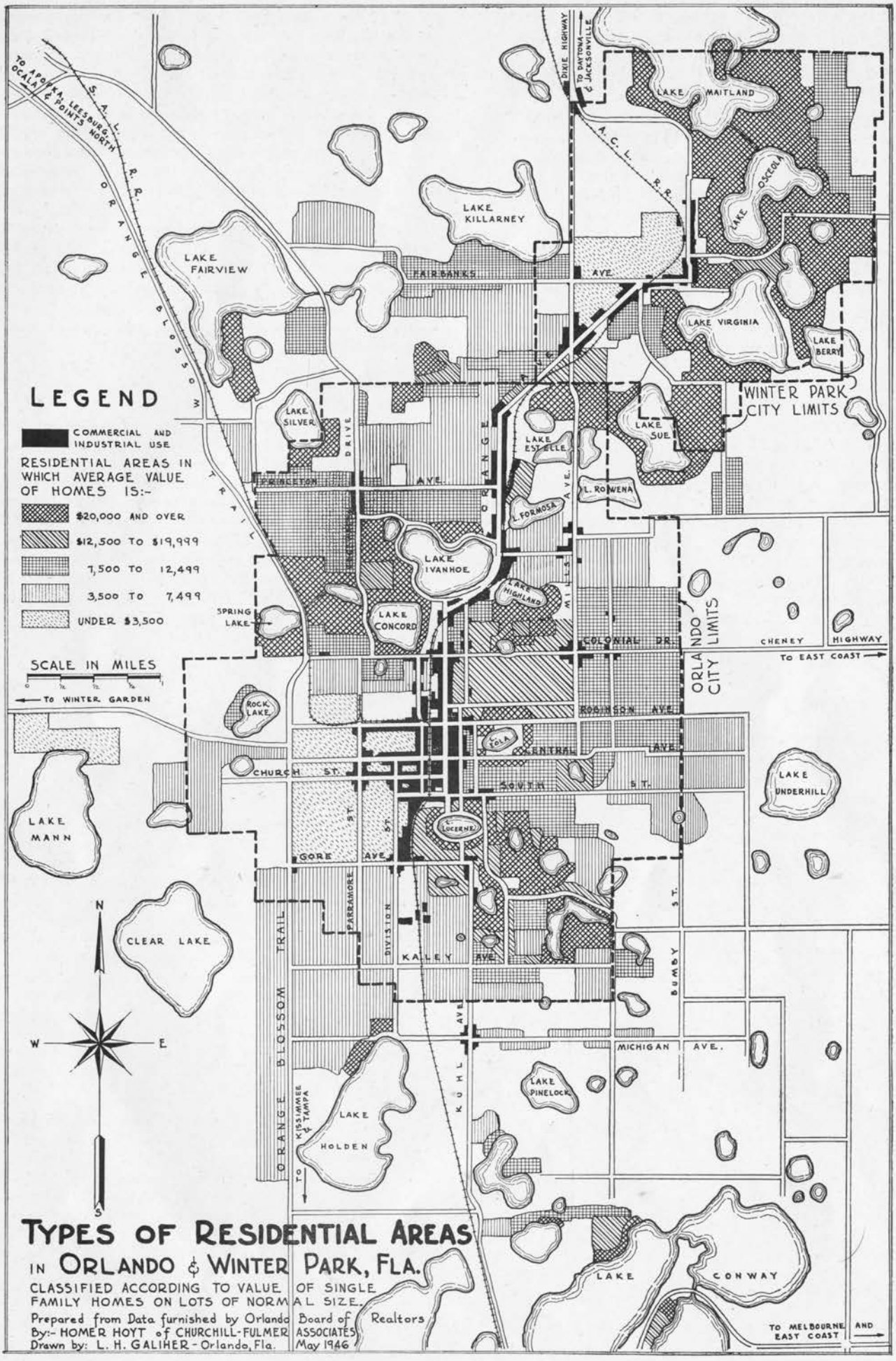
Year	*Private*	*Public*	*Total*
1941	512	0	512
1942*	135	90	225
1943	0	0	0
1944	56	160	216
1945	247	0	247

512 dwelling units built in the City of Orlando in the year 1941, and four times the 247 dwelling units built in 1945 (see Table 40-A) and yet it is a very minimum figure. If construction costs can be reduced or if the general level of incomes rises faster than increases in construction costs, the amount of private construction could easily reach 2,000 units a year in Orange County until 1950. The figure of 1,000 new private dwelling units a year for the Orlando region is the conservative figure we will adopt in this report as indicating the sound economic demand for homes. This demand is predicated upon some reduction in present building costs by elimination of some of the present wasteful elements in costs. It does not include public housing units, which can be built in any volume the public is willing to pay for.

Supply of Land Available. Since the City of Orlando is almost entirely built up, much of the building program of 5,000 homes in the next five years must take place in the areas surrounding Orlando. We have made a map showing location of all tracts suitable for residential development within ten miles from Orlando by eliminating all swamps, or land flooded in wet weather, orange groves or land now occupied by houses. We find a total of 100 square miles or 64,000 acres available for development. Since the

*No permits for new dwelling units from June 1942 to September 1944 except 25 private units in February 1944 and 160 public units in June 1944.

Fig. 2


LEGEND
COMMERCIAL AND INDUSTRIAL USE
RESIDENTIAL AREAS IN WHICH AVERAGE VALUE OF HOMES IS:-
$20,000 AND OVER
$12,500 TO $19,999
7,500 TO 12,499
3,500 TO 7,499
UNDER $3,500
SCALE IN MILES
TO WINTER GARDEN
TO APOPKA LEESBURG & POINTS NORTH
S. A. L. R. R.
ORANGE BLOSSOM TRAIL
DIXIE HIGHWAY
TO DAYTONA & JACKSONVILLE
A. C. L. R. R.
LAKE MAITLAND
LAKE OSCEOLA
LAKE KILLARNEY
LAKE FAIRVIEW
FAIRBANKS AVE.
LAKE VIRGINIA
LAKE BERRY
WINTER PARK CITY LIMITS
LAKE SILVER
LAKE ESTELLE
LAKE SUE
L. ROWENA
FORMOSA
PRINCETON AVE.
LAKE IVANHOE
LAKE HIGHLAND
SPRING LAKE
LAKE CONCORD
COLONIAL DR.
ORLANDO CITY LIMITS
CHENEY HIGHWAY
TO EAST COAST
ROBINSON AVE.
ROCK LAKE
CENTRAL AVE.
CHURCH ST.
SOUTH ST.
LAKE UNDERHILL
LAKE MANN
LUCERNE
GORE AVE.
PARRAMORE
DIVISION
KALEY AVE.
BUMBY
CLEAR LAKE
N
W
E
S
KUHL AVE.
MICHIGAN AVE.
LAKE PINELOCK
ORANGE BLOSSOM TRAIL
KISSIMMEE & TAMPA
LAKE HOLDEN
TO
LAKE CONWAY
TO MELBOURNE AND EAST COAST
TYPES OF RESIDENTIAL AREAS
IN ORLANDO & WINTER PARK, FLA.
CLASSIFIED ACCORDING TO VALUE OF SINGLE FAMILY HOMES ON LOTS OF NORMAL SIZE.
Prepared from Data furnished by Orlando Board of Realtors
By:- HOMER HOYT of CHURCHILL-FULMER ASSOCIATES
Drawn by: L. H. GALIHER - Orlando, Fla. May 1946

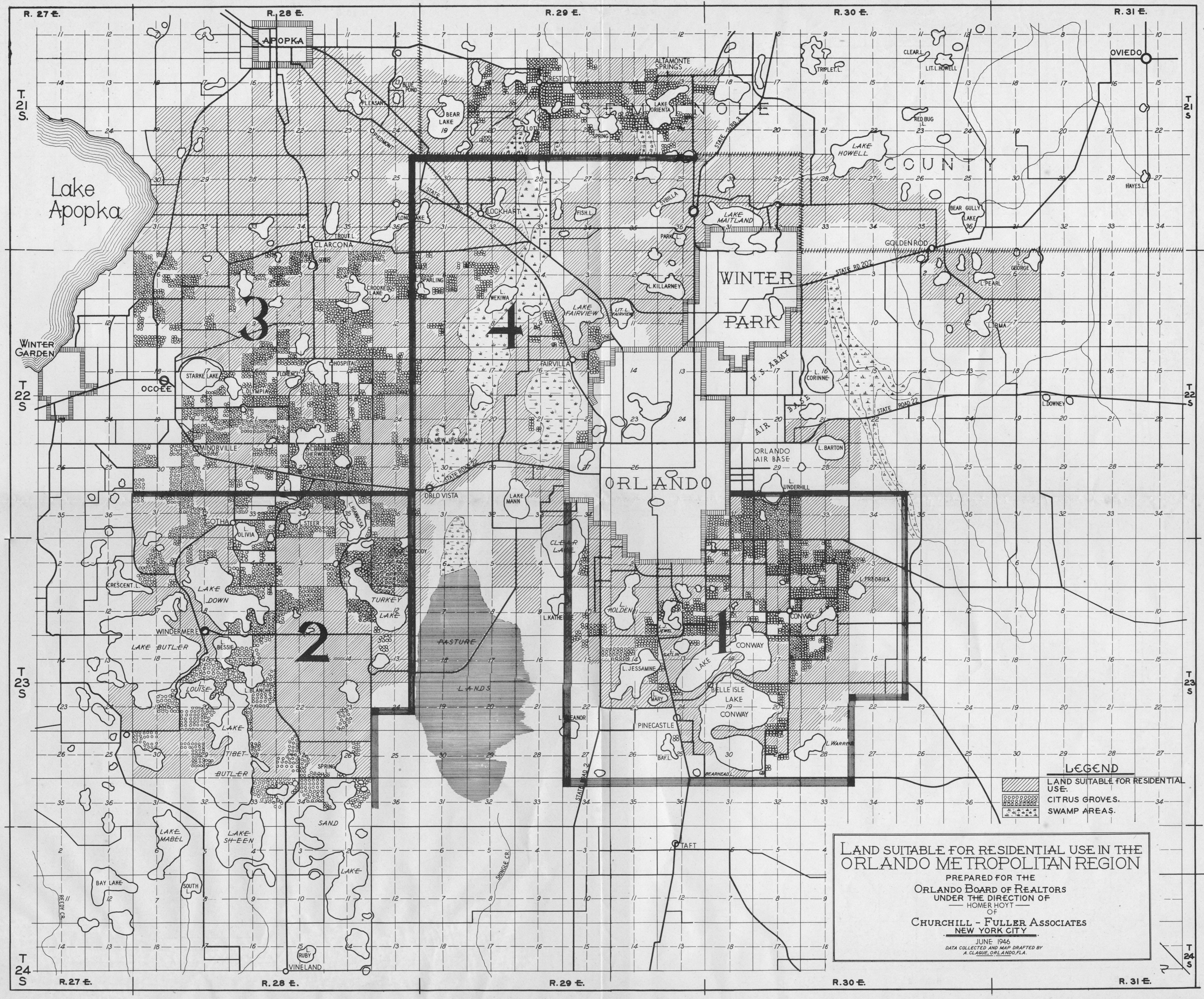
5,000 homes required in the next five years even with a half acre allowed for each home will require only 2,500 acres, it is possible to select areas for development in the direction of growth and to allow large open areas between developments.

Direction of Growth. The main growth of Orlando has been northeast towards Winter Park and northwest. (See Fig. 2). The development of the northwest section has been held back by lack of roads to the west, but the completion of the state highway connecting the east and west coast along the line of Colonial Avenue will open up a new territory very close to Orlando. The map of residential areas in Orlando (Fig. 2) shows that high rent areas are located principally around the lakes and hence new areas around lakes would also be preferred. Land in the Lake Conway section or in the belt of lakes and orange groves due west of Orlando would offer the attractions of lakes. There are also lake areas north and northwest of Orlando. Growth to the east of Orlando is largely blocked by the air base and by the low swampy nature of the terrain beyond.

On any side of Orlando there is more than enough land suitable for residential development to take care of the entire residential growth of the Orlando metropolitan region for the next ten years. As against a total demand of 6 to 7 square miles to provide homes for population growth to 1955, there are 15 square miles of land in the Lake Conway section to the southeast (Area 1 on folded map), 16 square miles among the orange groves in the Windermere section (Area 2 on folded map), 21 square miles immediately northwest of the City (Area 4 on folded map), 32 square miles northwest of Area 4 (Area 3 on folded map), and 16 square miles northeast of Orlando. This is a total of 100 square miles of residential land within nine miles of the City limits. (See folded map).

Because of the abundant supply of residential land near Orlando, there can be no justification for any sharp rise in the prices of raw acreage, except for favored locations bordering lakes. It will be a great advantage to Orlando to offer home sites to new residents at relatively low prices, which will enable them to buy a home at a lower total cost than in areas where the buildable land accessible to transportation is limited in amount as in New York or Pittsburgh.

Orlando's Opportunity for Planning. Nothing can stop the physical growth of the Orlando region in the next five years. Now is the time however to decide whether that growth will be orderly and scientifically planned or chaotic. The pattern of the suburban region around Orlando for generations to come will be determined by the manner of building in the next five years. Will the Realtors and Citizens of Orlando build 5,000 individual houses scattered among a confused jumble of land uses or will they build modern planned communities whose amenities of recreation areas, schools, churches and shops are shared by the residents in 5,000 new homes? The addition of 5,000 new houses to Orlando can create a new model urban region that will attract visitors from all over the United States to marvel at the beautiful vistas in the new suburbs of Orlando. That is the great opportunity that now knocks on the door of Orlando.


LAND SUITABLE FOR RESIDENTIAL USE IN THE
ORLANDO METROPOLITAN REGION
PREPARED FOR THE
ORLANDO BOARD OF REALTORS
UNDER THE DIRECTION OF
HOMER HOYT
OF
CHURCHILL - FULLER ASSOCIATES
NEW YORK CITY
JUNE 1946
DATA COLLECTED AND MAP DRAFTED BY
A. CLAGUE, ORLANDO, FLA.
LEGEND
LAND SUITABLE FOR RESIDENTIAL USE.
CITRUS GROVES.
SWAMP AREAS.
R. 27 E.
R. 28 E.
R. 29 E.
R. 30 E.
R. 31 E.
T. 21 S.
T. 22 S
T. 23 S
T. 24 S
Lake Apopka
APOPKA
WINTER GARDEN
OCOEE
ORLANDO
WINTER PARK
SEMINOLE
COUNTY
OVIEDO
ALTAMONTE SPRINGS
FOREST CITY
CLARCONA
LOCKHART
FAIRVILLA
MINORVILLE
ORLO VISTA
GOTHA
WINDERMERE
PINECASTLE
BELLE ISLE
CONWAY
TAFT
VINELAND
GOLDENROD
U.S. ARMY AIR BASE
ORLANDO AIR BASE
PASTURE
LANDS
LAKE BUTLER
LAKE DOWN
TURKEY LAKE
LAKE CONWAY
LAKE MAITLAND
LAKE HOWELL
LAKE FAIRVIEW
CLEAR LAKE
LAKE SHEEN
LAKE MABEL
SAND LAKE
BAY LAKE
1
2
3
4