

MONTHLY

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FINANCE • INDUSTRY • AGRICULTURE • TRADE

FOURTH FEDERAL RESERVE DISTRICT

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Federal Reserve Bank of Cleveland

Cleveland 1, Ohio

## Construction: A New Outlook for 1952

**T**HE extended steel strike has washed out the possibility of setting a new record in 1952 in the dollar volume of new construction put in place.

This is in sharp contrast to the bright prospects envisioned in mid-May when total construction outlays were expected by the Department of Commerce and the Bureau of Labor Statistics to top \$32 billion for a new record and a 4 percent gain over 1951. Attainment of this mark, however, was predicated upon a rapid and progressive easing in the supply of metallics, particularly structural steel. It now appears likely that the construction industry will be hard pressed to equal last year's record \$31 billion.

**Outlook for 1952** Expenditures for new construction during the first half of 1952 reached a record total of \$14.9 billion—nearly

4 percent above the first six months of 1951. Most of the increases over last year were centered in outlays for industrial buildings (both public and private), military and naval projects, and public utility expansion. Total public expenditures were up 25 percent over the similar 1951 period while all private outlays were down 4 percent with the biggest deficits being registered by commercial, social, and recreational buildings. It would be necessary for the industry to maintain the 4 percent margin over last year through the second half, to achieve the \$32 billion as predicted early in May. In view of the length of the steel strike, it will not be possible to maintain this pace. Nevertheless, the volume of work put in place so far, plus the fact that most public outlays—particularly atomic energy plants and military projects—will

go ahead as planned, indicate that total volume for the year will still be the second largest on record.

**Material Supplies** The brightening and dimming of the construction outlook is traceable to revised estimates of defense requirements as well as changes in the supplies of steel, copper, and aluminum. Steel supplies, which prior to the strike were thought to be the easiest of the three metals, now appear as the main limiting factor on construction activity during the second half.

At the beginning of the year, the supply outlook seemed very dark. It brightened perceptibly early in March so that construction controls were eased slightly on most types of building projects. By mid-May the materials outlook had improved so substantially that a further and much more generous relaxation of material controls was thought possible for the third quarter, with promises of further easing for the final quarter. Copper supplies, the tightest of the three metals, appeared so improved by June 18 that the National Production Authority announced a "bonus" allotment of copper over and above third-quarter quotas. Increased production, particularly of steel and aluminum, and the stretching out of the defense program had released more of these metals for civilian use than was planned earlier in the year.

But, the steel strike, which began on June 2, caused the NPA to revise its proposals for more generous self-certification allowances in the third quarter. On June 18, the NPA announced that builders would be allowed to self-certify the same quantities of steel permitted in the second quarter. Only larger amounts

of copper and aluminum could be self-authorized pending the outcome of the steel strike. The ban on entertainment and amusement construction, in effect since November 1950, was continued instead of being eased as previously planned.

The prolonged steel strike has completely upset the decontrol schedule insofar as steel is concerned. A considerable volume of orders for delivery under second-quarter quotas remain unfilled and most mills' books are already filled with orders for third-quarter delivery. Completing shipments filed under second-quarter quotas plus the loss of third-quarter production most likely will delay the delivery of a substantial proportion of third-quarter orders until the fourth quarter. Once the mills reopen, "set asides" and priorities for defense and defense-related items will be piled on top of the backlog. It seems improbable that the mills will be able to clear that backlog this year unless steel allotments in the final quarter are cut below current levels. As a consequence, the construction industry will probably obtain less steel in the second half of the year than was used in the first six months. Also, controls over Class A steel items (such as bars, sheets, structural shapes, plate, pipe, wire, and other mill forms) probably will continue into 1953 instead of gradually disappearing towards the end of 1952 as was hoped.

It is hard to tell how severely the steel strike has affected the construction industry. It is possible to make some general observations, however. First, inventories of Class A steel items were, in most cases, limited to a 45 days' supply. These are already drawn down to the vanishing point or are seriously unbalanced.

Secondly, structural shapes were one of the few steel items in tight supply when the strike began June 2. Some projects were closed down in late June and early July as structural stocks were exhausted and projects requiring this type of steel will probably suffer the greatest quota cuts. This means at least several more quarters of close control over commercial, amusement, and recreational projects and may curtail some of the least essential industrial expansion. Top priority will, of course, go to the military, atomic energy, and industrial expansion projects in the defense program.

Finally, aluminum and copper quotas for the second half are higher than those of the first half. Since, in some cases, these two metals may be substituted for steel, some types of construction may be but little affected by the steel strike. The most obvious substitution is copper tubing for steel pipe in the list of Class A items but there is a wide range of possible alternatives in the list of builders' hardware and contractors' supplies. Thus, homebuilders may find an adequate supply of metallic building materials while heavy construction projects will probably have to be scaled down.

Since supplies of nonmetallic building materials are generally believed to be adequate, as is the supply of labor in most localities, any improvement in the outlook for steel will immediately be transferred to the construction industry—one of the nation's largest steel consumers.

### The Persistent Housing Boom

One of the highlights this year has been the continued high level of activity in residential building. Even though running about 4 percent behind last year's pace, about 568,000 new permanent nonfarm dwelling units were started throughout the country during the first six months. It is now estimated that over one million dwelling units will be placed under construction this year, as against the earlier official goal of some 800,000-850,000 new housing starts.

The seventh annual Survey of Consumer Finances<sup>1</sup> indicated that the number of consumers planning to buy new houses this year was about the same as last year, although fewer people were tentatively considering such a purchase. Furthermore, the number, in early 1952, planning to purchase a new house in 1953 was at least as large as the number with such plans for 1952. It would thus appear that for the remainder of this year and next year the market demand for new dwelling units may continue at high levels.

Demographic trends and the backlog of demand for housing also indicate several more years of sustained high demand for living space. The Office of Business Economics of the U. S. Department of Commerce<sup>2</sup> places the average annual demand for new dwelling units (exclusive of replacements) at around 750,000 a year if high levels of economic activity are maintained. This would provide enough new units to house the normal annual increase in households which is due primarily to marriages. In addition, several factors are temporarily swelling the market demand for new homes. One stems from doubled-up families. In April 1951, there were at least a quarter of a million married couples living with relatives or friends who might normally be expected to form their own households. Undoubtedly some of this backlog still exists.

Another source of demand is created by the low vacancy ratio. In April 1950, according to the Census of Housing, only 3.4 percent of all habitable non-seasonal dwelling units were vacant as compared with a normal vacancy ratio of 5.0 percent. The Office of Business Economics places the present backlog from this source in excess of 500,000 dwelling units.

Finally, there is replacement demand. Relatively unimportant during the past two decades and difficult to measure, replacement demand is nevertheless

<sup>1</sup> *Federal Reserve Bulletin*, April 1952, pp. 341-46.

<sup>2</sup> *Survey of Current Business*, April 1952, pp. 9-10.

capable of sustaining a high level of starts over the long term.

With a strong basic demand for new housing and an adequate material supply, the only major deterrent to homebuilding this year (aside from the effects of the steel strike) would be an inadequate supply of mortgage credit. It now appears that the supply of credit may be at least equal to last year's total, barring any unforeseeable heavy demand for other types of financing, as the flow of saving to financial institutions has continued large and repayments on outstanding mortgage debt have been heavy.

**Credit Regulations Eased**

More liberal credit terms on residential property were permitted by the joint action of the Board of Governors of the Federal Reserve System and the

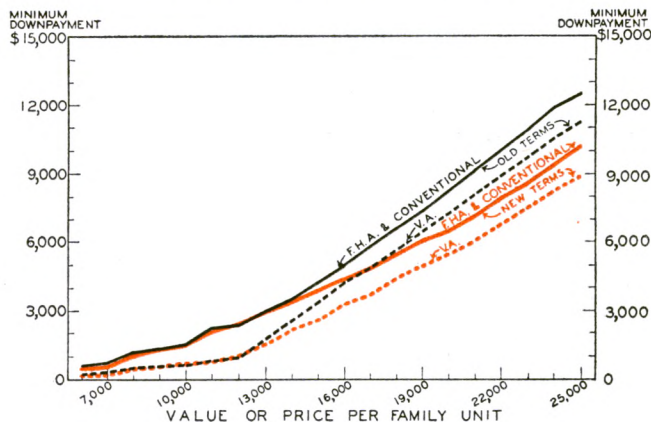
Housing and Home Finance Agency in revising Regulation X and related restrictions on housing credit beginning June 11. The Federal Housing Administration and the Veterans' Administration were authorized by the Housing Administrator to bring regulations covering FHA-insured mortgages and VA-guaranteed home loans in line with the revised Regulation X. A preference for veterans has been maintained under the VA mortgage guarantee program as is required by the Defense Production Act.

The changes in the credit restrictions consisted of lowering the minimum down payment requirements.<sup>3</sup> They were reduced in a varying degree from the lowest to the highest priced houses. The smaller minimum down payments permitted under the revised regulations are compared with the former terms in the adjacent chart. No change was made in the amortization requirements on mortgage credit subject to any of these regulations. The maximum time allowed for paying off such mortgage credit remains at 25 years for properties valued at \$12,000 or less, and 20 years for higher priced properties. Veterans may be allowed a longer period if the VA finds that current maturities would cause hardship.

The recent amendments to the Defense Production Act included a provision for relaxing residential credit controls if the seasonally adjusted annual rate of permanent nonfarm housing starts dropped below 1,200,000 each month in any consecutive three-month period. (That stipulated criterion represents a rate which was equaled in only one year, 1950, and which was scarcely achieved during the first six months of this year.) The period of relaxation would begin one month after the end of the three-month period and down payments could not be required in excess of 5 percent of the transaction price. Once lowered, down payment requirements could not be raised again until one month after a three-month

**MINIMUM DOWN PAYMENT REQUIREMENTS ON ONE-FAMILY UNITS**

(Before and After June 11, 1952)



... under the present credit terms, a \$20,000 house, for example, may be purchased with \$6,450 down, as against \$8,200 under former schedules (FHA and conventional mortgages). By October, the present minimum requirements are susceptible to further drastic modification, especially in the higher-price brackets, in the event that housing starts fail to reach a 1,200,000-per-year rate.

Source: Board of Governors of the Federal Reserve System.

period during which the annual rate of starts exceeded 1,200,000 in each consecutive month.

No official seasonally adjusted series on housing starts exists today but the Bureau of Labor Statistics is compiling one. Should it show that the annual rate of starts in June, July, and August was below the 1,200,000-per-year rate, Regulation X and the companion VA and FHA regulations will be relaxed no later than October 1, 1952.

**Defense Housing**

Nearly 84,000 dwelling units have been programmed in 169 critical defense housing areas throughout the country up to June 18. About three-quarters of that number were rental units. Intended for military personnel and immigrant defense workers in the designated areas, the programmed units are to be built by private builders. Incentives are created by removing or relaxing real estate credit regulations on the required number of homes and by making available mortgage insurance under very liberal provisions.

A study of 15 critical defense housing areas, according to field surveys by, and reports to, the Bureau of Labor Statistics, reveals that defense housing starts have very little impact on the certified community's level of starts. The cumulative number of dwelling units started or building permits authorized since the area was certified is many times the number of programmed units started.

<sup>3</sup> Regulation X applies to credit terms on conventionally financed residences started after August 3, 1950, while FHA and VA regulations cover both old and new housing.

## Population Growth in Fourth District

THE final tabulation of the 1950 Census of Population<sup>1</sup> establishes the following population facts with respect to the Fourth District:

First, the 1940-1950 population increase was smaller in the Fourth District than in the country as a whole. The population of Ohio alone, however, grew as rapidly as that of the rest of the country. (See Table I.)

Second, the average square mile in the District now contains 176 persons as against 160 in 1940, or an increase of 10 percent in density, whereas, in the United States as a whole, density increased from 44 to 51 persons per square mile, or nearly 15 percent. (See Table II.)

Third, the percentage of the population described as urban was 64.7 percent or approximately the same as the rest of the country. The ratio of urban to rural is now the highest on record, both in the Fourth District and in the nation. (See Table III.)

**Slower Growth in Fourth District** The population of the Fourth District is not increasing so rapidly as that of the continental United States. In fact, in the present century the District's rate of growth has exceeded that of the country as a whole in only one intercensal period—the 1910-20 decade. During the 1940-50 period, the population of the 48 states and the District of Columbia increased by 19 million persons, the largest numerical increase recorded in any intercensal period. The absolute gain in the District's population over the same ten years was the second smallest for any decade since the turn of the century, exceeding only the 1930-40 increase.

The rate of growth of the whole country between 1940 and 1950 was 14.5 percent, nearly double the 1930-40 rate and roughly equivalent to the 1910-20 and 1920-30 rates suggesting that the severe slackening-off during the 1930's was not, as then feared, a sharp alteration of trend, but a deviation from it. In the District, however, the 1940-50 rate of growth was well below the rate prevailing earlier in the century even though it was more than double the 1930-40 rate. This was largely due to a net migration out of Eastern Kentucky, Western Pennsylvania, and West Virginia's panhandle. The population increase in the state of Ohio paralleled the rise experienced nationally with the 1940-50 numerical gain exceeding that of any previous intercensal period.

In recent years the natural increase, or the excess of births over deaths, has accounted for most of the nation's population increase with immigration playing a minor role. But large regional shifts in the population—interregional and interstate migration—do take place. In fact, they were intensified during the past Census period by the second World War. The most conspicuous result of this population upheaval was the 53 percent gain in California's population, moving it up from the fifth most populous state in 1940 to second place in 1950. The effects were also felt by the Fourth District. Ohio was the only District state experiencing a net inflow of migrants between 1940 and 1950. However, this gain was more than offset by a net outflow from the rest of the District resulting in a net loss of about 170,000 migrants from the Fourth District. But even if no migration had occurred, the District's population would have experienced a natural increase of only about 12 percent over 1940 as compared with the actual increase of 10.4 percent. As shown in Table I, the rates of growth varied widely between the different parts of the District due to the migratory outflow.

Table I  
POPULATION GROWTH

Area	Percent increase over preceding census			
	1950	1940	1930	1920
Eastern Kentucky.....	0.3	10.4	14.9	11.5
Ohio.....	15.0	3.9	15.4	20.8
Western Pennsylvania.....	5.6	3.3	11.0	17.0
West Virginia Panhandle.....	-2.3	2.5	7.5	12.4
FOURTH DISTRICT.....	10.4	4.4	14.1	18.5
CONTINENTAL UNITED STATES..	14.5	7.2	16.1	14.9

Source: Bureau of the Census

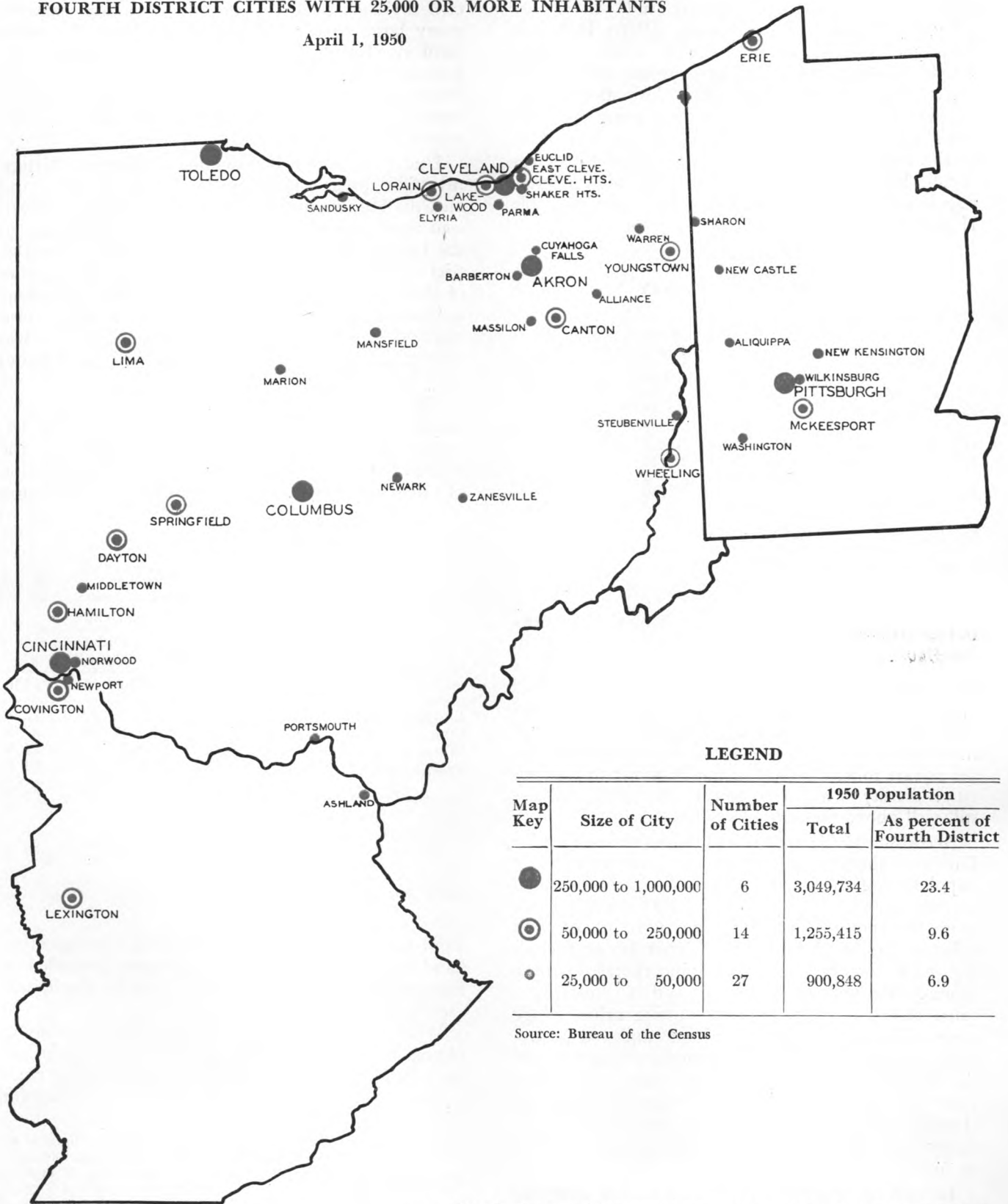
**Population Density** The Fourth District contains only 2.5 percent of the country's land area but held about 8.6 percent of the nation's population in 1950. As a result, the District's population density was about 176 persons per square mile, nearly 2½ times the United States' average density of 51 persons to each square mile of land area.

Cuyahoga County, Ohio, was the most densely populated county in the District with 3,047 persons per square mile and Forest County, Pennsylvania, was the most sparsely settled with 12 people per square

<sup>1</sup> 1950 Census of Population, Preprint of Volume I, *Number of Inhabitants*: Report P-A17, *Kentucky*; Report P-A35, *Ohio*; Report P-A38, *Pennsylvania*; and Report P-A48, *West Virginia*.

**FOURTH DISTRICT CITIES WITH 25,000 OR MORE INHABITANTS**

April 1, 1950



**LEGEND**

Map Key	Size of City	Number of Cities	1950 Population	
			Total	As percent of Fourth District
●	250,000 to 1,000,000	6	3,049,734	23.4
⊙	50,000 to 250,000	14	1,255,415	9.6
●	25,000 to 50,000	27	900,848	6.9

Source: Bureau of the Census

. . . the six largest cities contain roughly one-fourth of the District's population. Nearly 40 percent resides in cities of 25,000 or more.

mile. Three other counties in the District had more than 1,000 persons per square mile in 1950: Allegheny County, Pennsylvania, 2,076; Hamilton County, Ohio, 1,749; and Lucas County, Ohio, 1,153. All states or parts of states in the District had more people per square mile than the national average which is held down by the large tracts of public lands and large farms and ranches in the West. Due to the heavy concentration of people around Pittsburgh, Western Pennsylvania was the most densely populated of the District's four major areas, as Table II shows.

Table II  
POPULATION DENSITY

Area	Population per Square Mile of Land Area			
	1950	1940	1930	1920
Eastern Kentucky.....	78	78	71	62
Ohio.....	194	168	163	141
Western Pennsylvania.....	251	238	232	209
West Virginia Panhandle.....	167	171	166	141
FOURTH DISTRICT.....	176	160	152	135
CONTINENTAL UNITED STATES..	51	44	41	36

Source: Bureau of the Census

### Urban Growth Continues

Nearly two-thirds of the District's population in 1950 resided in urban areas—places of 2,500 or more and specific fringe areas around urbanized areas. Just about half of the residents lived in cities of 10,000 or more containing 1.3 percent of the District's land area, or an average of about 6,900 persons per square mile. The rest of the District had a population density of about 90 persons per square mile—still well above the national average.

According to the urban-rural definition used by the Bureau of the Census for the 1950 Census, the urban population of the Fourth District "... comprises all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, towns, and villages; (b) the densely settled urban fringe, including both incorporated and unincorporated areas, around cities of 50,000 or more; and (c) unincorporated places of 2,500 or more outside urban fringe areas." Under the urban definition employed in previous censuses, the urban population comprised only the persons living in incorporated places of 2,500 or more plus seven townships in Western Pennsylvania classified as urban under special rules. Under both definitions, the remaining population was classified as rural.

In both the old and new definitions, the most important component of the urban population is the inhabitants of incorporated places of 2,500 or more.

But, even with special rules classifying other minor civil divisions as urban, the old definition excluded many large closely built-up places from the urban territory. In order to improve this situation, the Bureau of the Census set up boundaries for urban fringe areas around cities with 50,000 inhabitants or more in 1940 and for unincorporated places outside urban fringe areas.

Under the new urban definition there are thirteen urbanized areas wholly in the Fourth District<sup>2</sup> and one, the Huntington, W. Va.—Ashland, Ky., urbanized area, with about four-tenths of its population in the District. In 1950, nearly three-fourths of the District's urban population resided within the boundaries of these urbanized areas—about the same percentage as in the country as a whole. In fact, the urban-rural composition of the District's population in 1950 was very similar to that of the continental United States (see Table VI).

Nevertheless, Table III shows that the urban population of the Fourth District has been growing less rapidly than that of the urban population of the United States as a whole. In fact, the rural population of Ohio increased at a faster rate between 1940 and

Table III  
URBAN POPULATION

Area	Percent Urban			
	New Urban Definition	Old Urban Definition		
		1950	1950	1940
Eastern Kentucky.....	31.0	27.5	23.8	25.2
Ohio.....	70.2	66.4	66.8	67.8
Western Pennsylvania...	65.6	60.1	60.7	61.8
West Virginia Panhandle..	63.8	62.5	53.5	54.5
FOURTH DISTRICT.....	64.7	60.5	59.8	61.2
CONTINENTAL UNITED STATES.....	64.0	59.0	56.5	56.2

Source: Bureau of the Census.

1950 than did the urban population. On the other hand, the number of rural inhabitants decreased in Eastern Kentucky and the West Virginia Panhandle (see Table V).

What the figures do not show is that the number of persons on farms in Ohio *decreased* during the last intercensal period and that the growth of the rural nonfarm population was about 1½ times the rate for

<sup>2</sup> The thirteen urbanized areas in the Fourth District, as listed in the 1950 Census, are: Akron, Canton, Cincinnati, Cleveland, Columbus, Dayton, Hamilton, Springfield, Toledo, and Youngstown, all in Ohio; Erie and Pittsburgh in Pennsylvania; and Wheeling, West Virginia. In addition to the Huntington-Ashland urbanized area, there are 33 inhabitants of the Johnstown, Pa., urbanized area residing in the District.

the total population of the state. However, because of changes in the definitions of the farm and nonfarm components of the rural population between the two Census periods, the data are not comparable and only very general observations may be made concerning them.

**Table IV**  
**POPULATION AND LAND AREA OF**  
**THE FOURTH DISTRICT**  
**January 1, 1920 and April 1, 1930-1950**

Subject	1950	1940	1930	1920
<b>Total Population</b>				
Eastern Kentucky.....	1,383,816	1,379,425	1,249,517	1,087,525
Ohio.....	7,946,627	6,907,612	6,646,697	5,759,394
Western Pennsylvania.....	3,501,481	3,317,201	3,210,780	2,893,242
West Virginia Panhandle.....	200,546	205,290	200,201	170,330
<b>FOURTH DISTRICT.....</b>	<b>13,032,470</b>	<b>11,809,528</b>	<b>11,307,195</b>	<b>9,910,491</b>
<b>CONTINENTAL UNITED STATES..</b>	<b>150,697,361</b>	<b>131,669,275</b>	<b>122,775,046</b>	<b>105,710,620</b>
<b>Land Area<sup>1</sup></b> in square miles				
Eastern Kentucky.....	17,711	17,772	17,614	17,614
Ohio.....	41,000	41,122	40,740	40,740
Western Pennsylvania.....	13,931	13,931	13,864	13,864
West Virginia Panhandle.....	1,202	1,202	1,206	1,206
<b>FOURTH DISTRICT.....</b>	<b>73,844</b>	<b>74,027</b>	<b>73,424</b>	<b>73,424</b>
<b>CONTINENTAL UNITED STATES..</b>	<b>2,974,726</b>	<b>2,977,128</b>	<b>2,977,128</b>	<b>2,973,776</b>

Source: Bureau of the Census.

<sup>1</sup> Excludes inland water area. The difference in land area estimates between Census years is largely due to the development of more accurate and detailed cartographic maps. However, these differences may also be influenced by changes in inland water areas.

**Table V**  
**URBAN AND RURAL POPULATION OF**  
**THE FOURTH DISTRICT**  
**April 1, 1930-1950**

Area	New Urban-Rural Definition 1950	Old Urban-Rural Definition				
		1950	1940	1930	Percent Increase	
					1940 to 1950	1930 to 1940
<b>Urban Population</b>						
Eastern Kentucky....	428,841	380,564	328,724	315,398	15.8	4.2
Ohio.....	5,578,274	5,273,206	4,612,986	4,507,371	14.3	2.3
Western Pennsylvania..	2,295,338	2,104,307	2,014,117	1,983,660	4.5	1.5
W. Virginia Panhandle	127,998	125,323	109,825	109,036	14.1	0.7
<b>FOURTH DISTRICT.....</b>	<b>8,430,451</b>	<b>7,883,400</b>	<b>7,065,652</b>	<b>6,915,465</b>	<b>11.6</b>	<b>2.2</b>
<b>CONTINENTAL UNITED STATES.....</b>	<b>96,467,686</b>	<b>88,927,464</b>	<b>74,423,702</b>	<b>68,954,823</b>	<b>19.5</b>	<b>7.9</b>
<b>Rural Population</b>						
Eastern Kentucky....	954,975	1,003,252	1,050,701	934,119	-4.5	12.5
Ohio.....	2,368,353	2,673,421	2,294,626	2,139,326	16.5	7.3
Western Pennsylvania..	1,206,143	1,397,174	1,303,084	1,227,120	7.2	6.2
W. Virginia Panhandle	72,548	75,223	95,465	91,165	-21.2	4.7
<b>FOURTH DISTRICT.....</b>	<b>4,602,019</b>	<b>5,149,070</b>	<b>4,743,876</b>	<b>4,391,730</b>	<b>8.5</b>	<b>8.0</b>
<b>CONTINENTAL UNITED STATES.....</b>	<b>54,229,675</b>	<b>61,769,897</b>	<b>57,245,573</b>	<b>53,820,223</b>	<b>7.9</b>	<b>6.4</b>

Source: Bureau of the Census.

**Table VI**  
**POPULATION OF THE FOURTH DISTRICT**  
**AND THE UNITED STATES**  
According to new urban-rural definition: April 1, 1950

Classification	Fourth District	United States	As percent of total	
			Fourth District	United States
TOTAL POPULATION.....	13,032,470	150,697,361	100.0%	100.0%
URBAN POPULATION.....	8,430,451	96,467,686	64.7	64.0
In urbanized areas.....	6,184,865	69,249,148	47.5	45.9
In urban places outside urbanized areas.....	2,245,586	27,218,538	17.2	18.1
RURAL POPULATION.....	4,602,019	54,229,675	35.3	36.0
Rural nonfarm <sup>1</sup> .....	2,895,500	30,882,000	22.2	20.5
Rural farm <sup>1</sup> .....	1,706,500	23,347,000	13.1	15.5

Source: Bureau of the Census.

<sup>1</sup> Partially estimated by the Research Department of the Federal Reserve Bank of Cleveland on the basis of preliminary Census reports on the population characteristics of states.

**CONSTRUCTION:**

(CONTINUED FROM PAGE 3)

**Industrial Expansion** Projects closely related to the defense program continue to be the main prop under construction activity. They include military and atomic energy projects, the expansion of defense-supporting industries under the stimulus of the rapid amortization program, and the extension of transportation, storage, and electric power facilities which are also aided by fast tax write-offs.

The major stimulant to industrial expansion is the rapid amortization program provided for by the Revenue Act of 1950. Normally, the period that the Bureau of Internal Revenue permits for the depreciation of new facilities varies up to 25 years depending upon the useful life expectancy of the facility. Under the Revenue Act of 1950, however, the Defense Production Administration may shorten this period to 5 years for up to 100 percent of the new investment. The actual percentage certified for the fast tax write-offs varies from one facility to another depending, along with other factors, "on the type of facility, amount of expansion required for the emergency, the probable usefulness of the plant for other than defense purposes after the emergency, and the degree of financial aid deemed necessary to encourage the expansion". As of April 15, the average percentage authorized for accelerated amortization was 59 percent.

The DPA estimates that approximately 54 percent of the dollar value of defense production facilities covered by certificates of necessity issued through March 31, 1952 were in place on June 30, 1952. This percentage represents nearly \$9.5 billion out of a total contemplated cost of \$18.0 billion. However, by July 2, accelerated amortization amounting to \$20.8 billion in new or expanded facilities had been approved indicating that construction will continue to be stimulated by these certificates of necessity for many months to come.

Industrial firms located in the Fourth District had received certificates of necessity covering nearly 1,500 projects by June 20. These certificates called for an estimated expenditure of about \$2.0 billion, or about 14 percent of all expenditures for additional plant and equipment proposed under the program in the continental United States. In addition to the expansion of industrial facilities, District firms have been issued rapid amortization rights covering nearly \$250 million worth of new electric power generating and distribution facilities and over \$350 million for the extension of rail and water transportation. This would bring the total expansion planned by firms with main offices in the District to over \$2.6 billion today. Construction costs amount to about one-third of this total with the balance going for machinery and equipment, land, and overhead.

**CERTIFICATES OF NECESSITY ISSUED TO FOURTH DISTRICT FIRMS**as of June 20, 1952<sup>1</sup>

Metropolitan Area	No. of Certificates	Proposed Investment	Percent of Grand Total
Akron.....	95	\$ 78,065,000	.5%
Canton.....	56	21,808,000	.1
Cincinnati.....	106	68,221,000	.5
Cleveland.....	340	238,899,000	1.6
Columbus.....	39	5,354,000	.0
Dayton.....	71	75,125,000	.5
Eric.....	22	28,543,000	.2
Hamilton-Middletown.....	18	53,284,000	.4
Huntington-Ashland <sup>2</sup> .....	12	64,637,000	.4
Lima.....	14	32,473,000	.2
Lorain-Elyria.....	26	27,479,000	.2
Pittsburgh.....	260	544,678,000	3.7
Springfield.....	11	2,583,000	.0
Toledo.....	32	36,621,000	.3
Wheeling-Steubenville.....	50	151,290,000	1.0
Youngstown.....	91	153,070,000	1.1
16 Metropolitan Areas.....	1,243	1,582,130,000	10.9
Fourth District <sup>3</sup> .....	1,482	2,040,422,000	14.0
Continental United States.....	9,975	14,542,918,000	100.0

<sup>1</sup> Excludes transportation, storage, and public utilities.<sup>2</sup> Fourth District portion only. Huntington-Ashland metropolitan area total is 22 certificates valued at \$72,353,000.<sup>3</sup> Sixteen metropolitan area total plus 239 certificates totaling \$458,292,000 issued to Ohio firms located outside metropolitan areas.

Source: Defense Production Administration

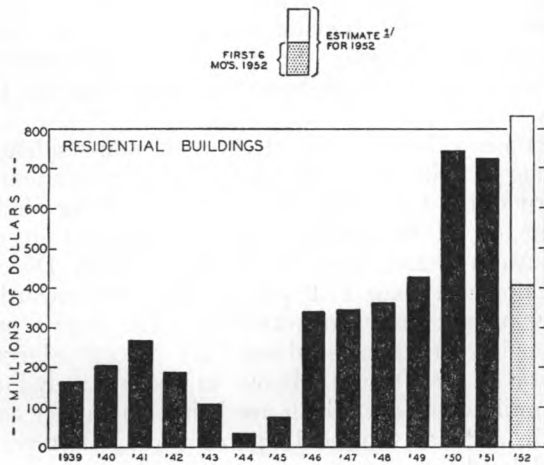
**"Nonessential" Construction** Expenditures for most types of construction considered nonessential to the defense effort — commercial, religious, hospital, and social and recreational buildings—will be off sharply for 1952 as a whole. Restrictions against these types of projects during the first six months have already assured this and the continuation of controls throughout the last half will only serve to intensify the drop. However, a large backlog of commercial projects has been built up during the past year and a half of restrictions, and will be placed under construction when materials are available.

**Fourth District Highlights** The pattern of contracts awarded in the Fourth District during the first six months of this year differs from that in the 37 states east of the Rockies in several important respects, as the following table shows.

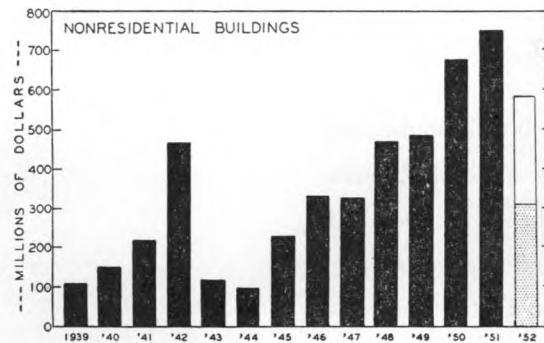
In the non-residential category, awards for commercial and manufacturing buildings are lagging



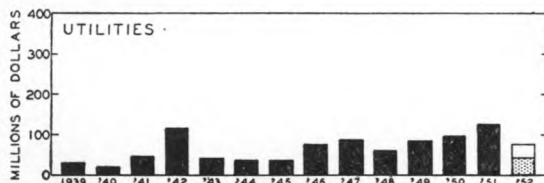
CONSTRUCTION CONTRACT AWARDS  
1939-1951 with estimates for 1952<sup>1</sup>  
Fourth District



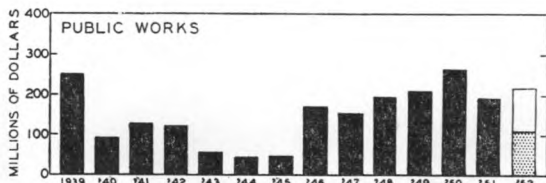
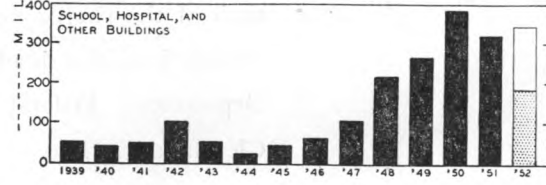
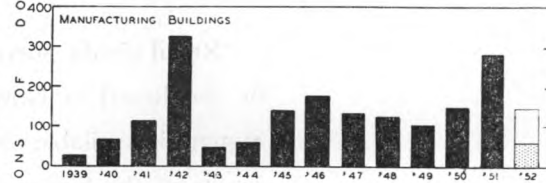
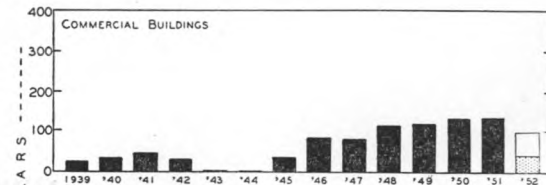
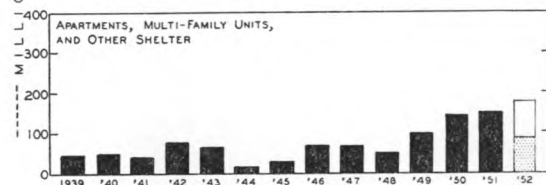
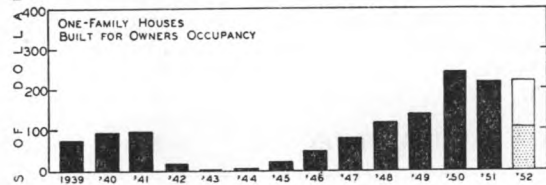
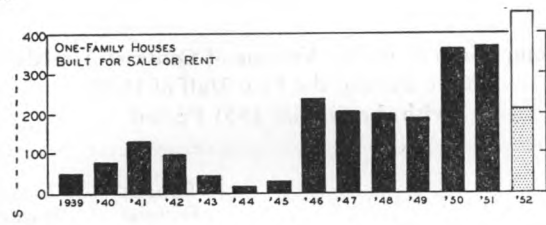
... the dollar volume of residential building awards will reach a new peak in the District this year if current levels of activity are maintained. Most of the boom is centered in speculatively-built one-family dwellings.



... nonresidential construction in the District is expected to be substantially below last year's record dollar volume, chiefly because of an anticipated decline in awards for manufacturing buildings.



... public utility awards may also decline from 1951's record high.



... the 1952 estimate of public works awards is above 1951's dollar volume and may be swollen further if awards are let for the Ohio Turnpike before the end of the year.

over 50 percent behind the record 1951 pace as compared with a deficit of about 30 percent in the 37 Eastern States. This may be partly due to the fact

**Comparison of Dollar Volume of Contract Awards  
Made During the First Half of 1952  
with the Similar 1951 Period**

	Fourth District	37 Eastern States
Non-Residential Buildings.....	-30%	-12%*
Residential Buildings.....	+13	+1
Public Works.....	+65	+19
Utilities.....	-44	+26
<b>TOTAL CONSTRUCTION.....</b>	<b>-8</b>	<b>-1*</b>

\* Excludes \$1 billion in atomic energy project awards made in May 1951

Source: F. W. Dodge Corporation

that much of the expansion in iron and steel facilities came early in the defense expansion program so that most of the emphasis locally is on equipping new plants. (Equipment expenditures are not reflected in construction statistics.) Without the boom in school construction, which is evident in the rest of the country to a lesser degree, the District's non-residential building awards would be even further behind last year's pace.

Partially offsetting the decline in non-residential building activity is the District's boom in residential construction. Last year, 11.7 percent of the dollar volume of all residential contracts awarded in the 37 Eastern States were let in the Fourth District when no more than 11.0 percent had been awarded locally in any prior postwar year. This year's proportion is even higher—about 12.1 percent—largely because of the District's boom in speculatively-built one-family dwellings which are being put under contract in a dollar volume 16 percent above last year's record level.

### ANNOUNCEMENT

“Retail Credit Survey—1951”, a booklet published by the Board of Governors of the Federal Reserve System, is available on request to this Bank. Detailed results of the Survey for the United States and for each of the twelve Federal Reserve Districts are included. Inquiries should be addressed to the Research Department, Federal Reserve Bank of Cleveland, Cleveland 1, Ohio.

## THE NEW SERIES E BOND

(On sale since May 1, 1952)

### Schedule of Redemption Values and Investment Yields

(Based on \$100 bond)

	Redemption value during each period	Addition to redemption value at beginning of each period	APPROXIMATE INVESTMENT YIELDS*	
			On issue price to beginning of each period	On current redemption value from beginning of each period to maturity
Issue Price.....	\$ 75.00			
Original Maturity Value.....	100.00			
For period beginning:				
At issue date.....	75.00	....	....	3.00%
½ year after issue date.....	75.40	.40	1.07%	3.10
1 year after issue date.....	76.20	.80	1.59	3.16
1½ years after issue date.....	77.20	1.00	1.94	3.19
2 years after issue date.....	78.20	1.00	2.10	3.23
2½ years after issue date.....	79.20	1.00	2.19	3.28
3 years after issue date.....	80.20	1.00	2.25	3.34
3½ years after issue date.....	81.20	1.00	2.28	3.41
4 years after issue date.....	82.20	1.00	2.30	3.49
4½ years after issue date.....	83.60	1.40	2.43	3.50
5 years after issue date.....	85.00	1.40	2.52	3.51
5½ years after issue date.....	86.40	1.40	2.59	3.54
6 years after issue date.....	87.80	1.40	2.64	3.58
6½ years after issue date.....	89.20	1.40	2.69	3.64
7 years after issue date.....	90.60	1.40	2.72	3.74
7½ years after issue date.....	92.00	1.40	2.74	3.89
8 years after issue date.....	93.60	1.60	2.79	4.01
8½ years after issue date.....	95.20	1.60	2.83	4.26
9 years after issue date.....	96.80	1.60	2.86	4.94
9½ years after issue date.....	98.40	1.60	2.88	9.92
9¾ years after issue date.....	100.00	1.60	3.00	....

\* Compounded semi-annually.

#### Major features:

1. Matures 9 years and 8 months after issue date.
2. Provides an investment yield of 3.00%, compounded semi-annually, if held to maturity (see last line in table above).
3. Is redeemable at any time after two months from issue date.
4. May be purchased in amounts up to \$15,000 per year (issue price) by one owner.
5. May be held beyond maturity (with approximately same 3.00% investment yield) for any period up to another ten years.

# Water and Industry

by CLYDE WILLIAMS, Director, Battelle Memorial Institute



More than 25 billion gallons of water are used daily by American industry. This is at least one-fourth of the nation's total consumption. It is double the amount used for general municipal purposes. Industrial installations depend upon it for cooling systems, processing of products, and boiler feed, as well as for sanitary and other service purposes.

Water supply has become more critical in recent years. Shortages have occurred in various parts of the country where the supply had previously been taken for granted. This has caused leaders in industry and government to re-examine present water-use practices and to study the potentials for increasing water supply and for making it more reliable.

Shortages of water have been brought on by a steady rise in its consumption without, at the same time, an adequate conservation program and systematic planning for the replenishment of supply. The expansion in the scale of industrial operations, population shifts from rural to urban areas, the greater use of water-consuming home appliances, air-conditioning, and more irrigation projects are among those factors that have contributed to higher water consumption. Use of water by industry alone has increased about 40 per cent in the last ten years. At least one authority has predicted that industrial usage of water will double during the next decade.

In the midst of apparent water scarcities, it is interesting to learn from the President's Water Resources Policy Commission just how large the country's water resources are. "The total quantity (of water) in constant circulation, measured in precipitation, amounts to about 4,300 billion gallons daily. This is roughly ten times the average flow of the Mississippi River.

"Some 3,000 billion gallons a day, on the average, return to the atmosphere as a vapor, through evaporation and transpiration (use by vegetation). This leaves the annual runoff to the sea at an average of about 1,300 billion gallons a day." At the present time, the country captures and uses only 100 to 200 billion gallons daily from this runoff.

The development of the country's tremendous water resources potential is a long-range project. Government and interested industrial leaders are giving the matter serious attention. Such development involves a wide variety of interrelated projects including flood control, irrigation, surface and ground water development, and better management of streams, forests, and lands. The study of new

sources of fresh-water supply, such as the ocean and artificial rain-making, are also in the picture.

For the immediate future, industry can go a long way toward solving its water supply problems by making more efficient use of existing water supplies. Principally, this means more extensive adoption of such measures as pollution abatement and increased re-use of water.

An industry-wide survey by the National Association of Manufacturers shows that three out of five of the plants they contacted did not reuse any of the water taken in. In recent years, however, the survey points out that "some of the large users, notably paper, petroleum, textiles, chemicals, and steel, have made enormous progress in developing water circuits for the use of water in more than one plant process. For example, one chemical concern reports that by recirculating its process water it has reduced process water requirements from 130 millions gallons per day to 4 million gallons per day. A steel mill in Ohio reuses drainage from drinking fountains and filter wash water."

The elimination or recovery of wastes that go into streams can greatly increase the supply of water suitable for downstream industrial or municipal use. This is now an important factor in the industrial development of some areas where otherwise adequate raw materials and labor supplies exist.

Methods are being devised for the treatment of wastes that formerly went into streams untreated. Petroleum and paper and pulp plants have taken the lead in this effort.

Many industrial plants and all domestic consumers are not only concerned with the quantity of water available, but also with its quality. This need has given rise to a considerable research effort on the more extensive development of underground water. It is usually cleaner and freer from contamination than river water.

Underground water reservoirs have been overworked in many parts of the country, without adequate thought given to their replenishment. It is estimated, however, that they provide the greatest natural fresh water storage facilities in the United States, even larger than those of the Great Lakes.

Recharging or restoration of underground water resources has been practiced successfully on the Pacific Coast, and in such localities as Louisville, Kentucky, and Des Moines, Iowa. This practice will become more extensive as more is learned about the technique of recharging, and as its advantages are more widely appreciated.

During recent years, recurring shortages of water in various parts of the country have caused the nation to take inventory of its water resources, and to re-examine present water-use practices. One fact stands out above all the rest. A great need exists for conservation and development of the country's tremendous water resources. This is necessary to insure an adequate, reliable supply of fresh water to industry and all other parts of the economy.

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Editor's Note—While the views expressed on this page are not necessarily those of this bank, the *Monthly Business Review* is pleased to make this space available for the discussion of significant developments in industrial research.