

# Construction and Housing 1946-47

**Bulletin No. 941**

**UNITED STATES DEPARTMENT OF LABOR**

**L. B. Schwellenbach, *Secretary***

**BUREAU OF LABOR STATISTICS**

**Ewan Clague, *Commissioner***



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## Letter of Transmittal

UNITED STATES DEPARTMENT OF LABOR,  
BUREAU OF LABOR STATISTICS,  
*Washington, D. C., June 4, 1948.*

The SECRETARY OF LABOR:

I have the honor to transmit herewith a report on construction activity and employment for the years 1946 and 1947. This report, which was prepared by the staff of the Branch of Construction Statistics, presents through the analysis of data gathered by that Branch the story of the postwar revival of the construction industry.

The planning and major part of the text preparation for the report was done by Dorothy Newman, assisted by Adela Stucke. The statistical data and analyses were prepared under the direction of Henry F. Haase and Edward M. Gordon.

EWAN CLAGUE, *Commissioner.*

HON. L. B. SCHWELLENBACH,  
*Secretary of Labor.*

## Preface

This report provides detailed statistics describing the shifts and trends in construction activity after World War II, and a brief interpretation of the reasons behind them. It is the latest of a series of yearly bulletins on construction which the Bureau of Labor Statistics has been publishing since 1921.

The figures in earlier years covered only building construction in the largest cities. Considerable expansion in the Bureau's construction statistics program has occurred during the past decade, so that figures are now available for building construction in the urban areas of the country as a whole and in about 2,500 cities. Estimates of expenditures for all of the major types of construction, nonbuilding as well as building, are prepared in cooperation with the United States Department of Commerce. In addition, special statistics are now provided on the volume of Federal construction, on the characteristics and kinds of labor involved in construction work, on construction employment, and on homebuilding.

In recent years, because of the critical housing problem and the importance of homebuilding in the total construction picture, the Bureau has paid special attention to developing and improving its statistics on the volume of nonfarm housing. Data on housing in the present bulletin incorporate the latest refinements in statistical method that have been devised by the Bureau's Branch of Construction Statistics and reflect the results of special housing surveys conducted after the war. The text deals in some detail with the progress of postwar housing construction, relating the developments in activity to economic and regulatory changes.



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# Construction and Housing, 1946-47

## Postwar Construction Expenditures

### Volume of New Construction

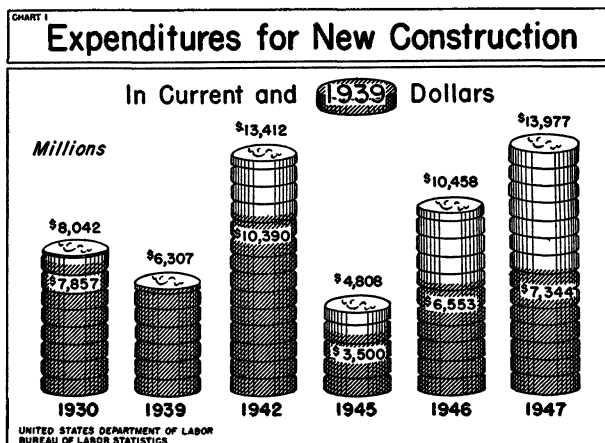
Construction activity launched into the fastest upswing in its history during the first 2 years following World War II. Spurred by reconversion needs of industry and the unusually great demand for living accommodations, expenditures for new construction in 1946 were more than double the amount in 1945. This unprecedented rise was followed by still another advance in 1947, bringing to an all-time high the dollar value of new work put in place in any one year. Record levels were achieved in the second postwar year not only for new activity as a whole but for the entire privately financed segment, and for nonfarm home building, construction on farms, conservation and development work, and public utilities construction (table 1).

Although the actual dollar outlay (almost 14 billion) for new construction in 1947 was the highest on record, the physical volume (measured in terms of 1939 dollars) had been exceeded several times in preceding years (table 2). Since the construction boom of the 1920's the highest level of activity, as measured in constant dollars, occurred in 1941 and 1942 at the crest of the war construction program. The total for those years exceeds the 1947 total by 27 percent and 41 percent, respectively. However, the physical volume in 1947 was substantially above that of 1940, when the defense program was well under way, and it was more than 2½ times as great as the depression low in 1933.

Even when deflated to 1939 prices, private expenditures for residential building were greater in 1947 than at any time in the previous 18 years. The volume of private nonresidential building, on the other hand, was 25 percent under 1946.

Considered in terms of either actual dollar out-

lay or physical volume, the construction record after World War II was impressive in view of existing conditions. During the war a tremendous deficit in housing piled up, and billions of dollars of maintenance work and capital improvements by business were deferred. At the same time, the liquid assets of business and individuals were accumulating. The backlog of consumer needs and the huge pool of savings at the war's end created a demand for new construction out of all proportion to the supply that could be provided in the immediate future. War-depleted construction organizations and materials production facilities could not be brought into full swing over night.



It took time to plan and organize building projects, to hire construction workers, and to assemble such materials as were available.

There was a severe shortage of building materials throughout most of 1946 as the materials industries struggled to expand to full production after sinking to a relatively low output in the later war years. The obstacles to increased production were many—shortages of raw prod-

ucts, of equipment and repair parts, and of certain skilled labor. Price increases, priority assistance, formal regulations and informal agreements, and premium payments were all used by the Government to increase output and relieve the more critical shortages. As a result, the materials situation began to ease late in 1946.

By that time, however, inflationary pressures in the construction field were becoming acute. There developed a reluctance to buy or build in a rising market.

But the most rapid increase in prices was over by April 1947. The check in prices, together with growing awareness by midyear that no sharp decline could be expected in the near future,

influenced a new spurt in construction activity. Furthermore, the improvement in materials supply led to more efficient building operations and somewhat greater stability of construction costs. Prospective builders became unwilling to wait any longer to start much needed new construction, particularly in the housing field.

The high volume of home building was sustained also by the availability of liberal Government financing under the FHA and VA programs. By midsummer the dollar volume of new construction activity was at record levels, and as 1947 drew to a close it seemed likely that 1948 would be a banner year for the industry.

TABLE 1.—Expenditures for new construction put in place, by type of construction, 1915-47<sup>1</sup>

Type of construction	Expenditures (in millions of dollars)															
	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	1937	1936	1935	1934	1933	1932
Total new construction <sup>2</sup> .....	13,977	10,458	4,808	4,136	7,784	13,412	10,490	7,042	6,307	5,186	5,487	4,836	3,230	2,805	2,376	3,290
Private construction.....	10,893	8,253	2,716	1,823	1,744	3,007	5,426	4,390	3,808	3,076	3,390	2,550	1,676	1,235	1,012	1,467
Residential building (nonfarm).....	5,260	3,183	684	535	650	1,315	2,765	2,355	2,114	1,511	1,372	1,131	665	361	278	462
Nonresidential building (nonfarm) <sup>3</sup> .....	3,131	3,346	1,014	350	232	635	1,486	1,028	785	764	1,068	712	472	455	404	499
Industrial.....	1,702	1,689	642	208	156	346	801	442	254	232	492	266	158	191	176	74
Commercial.....	835	1,110	199	55	32	150	400	342	287	279	378	283	206	169	127	216
Warehouses, office and loft buildings.....	216	309	52	16	13	57	114	85	76	89	128	104	70	62	41	110
Stores, restaurants, and garages.....	619	801	147	39	19	93	286	257	211	190	250	179	136	107	86	106
Religious.....	118	72	26	11	5	29	59	56	46	48	42	32	26	20	20	43
Educational.....	164	115	28	10	6	23	55	47	37	38	40	37	16	13	14	50
Social and recreational.....	92	121	24	16	6	28	68	63	94	92	69	51	32	32	32	57
Hospital and institutional.....	107	81	34	25	11	27	44	31	31	29	33	30	16	10	8	9
Hotel.....	43	52	11	4	2	14	27	23	17	19	22	15	11	8	8	15
Miscellaneous.....	70	106	50	21	14	19	32	24	21	23	15	12	13	14	18	12
Farm construction.....	450	350	191	213	292	271	303	236	226	196	225	189	176	93	69	39
Residential.....	253	212	116	136	185	144	174	127	120	104	118	104	96	54	43	26
Nonresidential.....	197	138	75	77	107	127	129	109	106	92	107	85	80	39	26	13
Public utilities.....	2,052	1,374	827	725	570	786	872	771	683	605	705	518	363	326	261	467
Railroad.....	318	258	264	247	211	197	187	167	137	119	199	149	116	128	94	139
Local transit.....	56	35	18	15	14	12	30	50	54	41	39	45	40	30	21	29
Pipeline.....	100	63	42	71	77	80	30	30	35	21	67	41	20	12	7	37
Electric light and power.....	611	443	245	163	144	255	305	311	308	267	218	139	87	66	59	109
Gas.....	457	270	141	146	63	87	111	91	61	65	80	77	45	43	35	66
Telephone and telegraph.....	510	305	117	83	61	155	179	122	98	92	102	67	52	47	45	87
Public construction.....	3,084	2,805	2,092	2,313	6,040	10,405	5,064	2,652	2,499	2,110	2,097	2,286	1,554	1,570	1,364	1,893
Residential building.....	182	369	71	190	700	545	430	200	65	35	93	61	9	1	0	0
Nonresidential building <sup>4</sup> .....	505	325	652	638	1,805	3,653	1,584	556	869	568	470	604	278	286	205	392
Industrial <sup>5</sup> .....	25	84	470	507	1,668	3,437	1,280	164	23	12	2	4	2	11	2	(9)
Commercial.....	(7)	4	4	4	4	6	21	34	32	18	22	14	7	13	4	(9)
Public administration.....	32	16	15	11	14	47	89	133	204	139	121	137	79	74	101	173
Educational.....	275	101	59	41	62	116	135	132	418	266	221	323	130	110	43	123
Social and recreational.....	17	11	9	7	8	5	15	18	47	37	34	50	19	27	6	15
Hospital and institutional.....	81	85	85	58	43	32	34	50	114	83	62	63	31	41	43	78
Miscellaneous.....	75	24	10	10	6	10	10	25	21	13	8	13	10	10	6	3
Military and naval facilities.....	204	188	690	837	2,550	5,016	1,620	385	125	62	37	29	37	47	36	34
Highway.....	1,233	772	386	346	420	616	800	822	867	858	902	927	708	826	809	961
State.....	900	506	226	232	311	485	552	561	505	562	607	634	429	564	522	561
County.....	202	165	89	62	59	95	117	137	142	144	142	109	103	87	105	168
Municipal.....	108	87	63	45	43	69	105	154	185	115	111	131	113	114	138	211
Federal <sup>6</sup> .....	22	14	8	7	7	17	26	30	35	37	42	53	64	61	44	21
Sewage disposal.....	177	97	37	26	32	39	48	67	82	89	95	115	68	54	34	69
Water supply.....	154	97	60	53	70	100	120	127	80	90	79	93	69	62	47	87
Miscellaneous public service enterprises <sup>7</sup> .....	117	87	55	46	43	36	63	90	91	94	101	111	59	41	61	135
Conservation and development.....	396	240	130	163	285	350	354	310	299	310	339	317	245	168	139	139
Bureau of Reclamation.....	125	60	39	36	42	60	79	74	72	67	60	56	47	35	26	26
Army Engineers.....	222	147	63	73	160	150	159	158	157	176	192	177	142	102	81	81
Tennessee Valley Authority.....	30	17	18	45	76	131	83	38	32	31	30	32	28	17	5	0
Other.....	19	16	10	9	7	9	33	40	49	44	44	59	65	51	35	32
All other public <sup>8</sup> .....	116	80	11	14	135	50	45	35	20	15	10	7	8	8	4	6

See footnotes at end of table.



TABLE 1.—Expenditures for new construction put in place, by type of construction, 1915-47<sup>1</sup>—Continued

Type of construction	Expenditures (in millions of dollars)																
	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915
Total new construction <sup>2</sup> .....	5,967	8,042	9,873	10,780	11,067	11,119	10,512	9,548	8,567	7,017	5,531	6,117	5,736	4,714	4,138	3,453	2,932
Private construction.....	3,375	5,265	7,476	8,313	8,733	9,040	8,439	7,705	6,987	5,377	3,991	4,779	3,770	2,488	2,865	2,750	2,217
Residential building (non-farm).....	1,228	1,446	2,797	3,869	4,175	4,496	4,505	4,195	3,640	2,734	1,661	1,545	1,536	691	902	1,066	950
Nonresidential building (nonfarm) <sup>3</sup> .....	1,104	2,099	2,822	2,797	2,825	2,878	2,373	1,897	1,896	1,638	1,543	2,082	1,147	771	860	771	513
Industrial.....	221	532	949	802	696	727	513	460	549	467	574	1,099	621	440	364	262	197
Commercial.....	437	856	1,097	1,121	1,145	1,107	940	740	716	613	570	625	(11)	(11)	(11)	(11)	(11)
Warehouses, office and loft buildings.....	259	559	581	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)
Stores, restaurants, and garages.....	178	297	516	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)
Religious.....	82	128	139	168	179	177	165	130	117	103	71	55	(11)	(11)	(11)	(11)	(11)
Educational.....	94	112	113	107	106	108	108	91	83	61	32	22	(11)	(11)	(11)	(11)	(11)
Social and recreational.....	116	140	164	224	252	255	199	131	128	132	119	104	(11)	(11)	(11)	(11)	(11)
Hospital and institutional.....	67	103	98	100	106	83	79	63	57	53	44	30	(11)	(11)	(11)	(11)	(11)
Hotel.....	46	164	199	224	291	365	313	222	199	181	109	118	(11)	(11)	(11)	(11)	(11)
Miscellaneous.....	41	64	63	51	50	56	56	60	47	28	24	29	(11)	(11)	(11)	(11)	(11)
Farm construction.....	97	193	279	275	283	251	259	257	270	218	183	381	414	323	315	255	205
Residential.....	59	107	147	145	149	132	136	135	142	115	96	201	218	170	166	134	108
Nonresidential.....	38	86	132	130	134	119	123	122	128	103	87	180	196	163	149	121	97
Public utilities.....	946	1,527	1,578	1,372	1,450	1,415	1,302	1,356	1,191	787	604	771	673	697	788	658	549
Railroad.....	292	521	510	433	462	491	393	365	361	176	184	184	274	266	365	361	241
Local transit.....	69	85	82	90	77	51	52	56	74	85	59	82	63	107	154	109	112
Pipeline.....	77	30	97	53	80	36	55	70	53	41	30	41	56	24	20	20	20
Electric light and power.....	225	377	350	338	362	362	421	463	412	229	163	262	156	102	123	117	92
Gas.....	117	181	185	212	257	248	171	206	133	139	66	78	56	26	45	70	41
Telephone and telegraph.....	166	338	364	246	212	227	210	196	158	117	102	124	76	73	85	61	43
Public construction.....	2,582	2,777	2,397	2,467	2,334	2,079	2,073	1,843	1,570	1,640	1,540	1,338	1,966	2,232	1,273	703	715
Residential building.....	0	0	0	0	0	0	0	0	0	0	0	0	14	28	0	0	0
Nonresidential building <sup>4</sup> .....	578	623	622	638	596	603	573	494	481	481	387	283	246	199	192	207	217
Industrial.....	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(11)	(11)	(11)	(11)	(11)
Commercial.....	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(11)	(11)	(11)	(11)	(11)
Public administration.....	173	121	103	85	84	70	56	39	44	55	51	38	(11)	(11)	(11)	(11)	(11)
Educational.....	269	344	367	378	367	399	400	353	346	342	274	190	(11)	(11)	(11)	(11)	(11)
Social and recreational.....	18	26	36	50	48	47	37	22	20	15	14	12	(11)	(11)	(11)	(11)	(11)
Hospital and institutional.....	104	111	95	108	80	68	61	60	55	60	40	33	(11)	(11)	(11)	(11)	(11)
Miscellaneous.....	14	21	21	17	17	19	19	20	16	9	8	10	(11)	(11)	(11)	(11)	(11)
Military and naval facilities.....	40	29	19	15	12	11	8	9	16	25	49	161	1,089	1,555	608	21	17
Highway.....	1,351	1,505	1,254	1,275	1,156	1,005	1,021	932	755	834	830	644	418	289	313	308	296
State.....	731	713	557	538	404	356	389	382	280	287	299	240	125	72	62	50	56
County.....	248	297	257	282	289	266	265	256	242	330	337	192	131	108	112	118	109
Municipal.....	350	478	429	444	453	373	357	285	226	213	191	208	159	108	139	140	133
Federal <sup>5</sup> .....	22	17	11	11	10	10	10	9	7	4	3	4	3	1	(11)	(11)	(11)
Sewage disposal.....	114	142	127	183	174	145	133	108	90	88	78	67	53	38	45	46	52
Water supply.....	156	201	126	117	138	140	145	155	113	113	100	86	71	56	46	49	54
Miscellaneous public service enterprises <sup>6</sup> .....	209	157	150	157	192	112	119	65	48	49	43	41	35	37	41	43	40
Conservation and development.....	135	111	86	72	63	61	73	79	65	48	52	55	39	29	27	28	36
Bureau of Reclamation.....	20	11	8	7	6	6	7	8	9	7	5	5	5	6	6	6	7
Army Engineers.....	81	75	59	46	40	41	51	55	43	30	36	41	29	20	18	20	27
Tennessee Valley Authority.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other.....	34	25	19	19	17	14	15	16	13	9	9	9	5	3	3	2	2
All other public <sup>10</sup> .....	9	9	13	10	3	2	1	1	2	2	1	1	1	1	1	1	1

<sup>1</sup> Revised as of April 1948. Construction expenditures represent the monetary value of the volume of work accomplished during the given period of time. These figures should be differentiated from valuation data reported in the section on city building, pages 31 to 42, and from data on value of Federal contract awards, appendix tables A-1 and A-2.

<sup>2</sup> Estimates of expenditures for 1915 through 1938 were made by the Office of Domestic Commerce, U. S. Department of Commerce, except for the nonfarm residential building segment, which was estimated by the Bureau of Labor Statistics. For 1939 and subsequent years, the estimates were prepared jointly by the Bureau of Labor Statistics and the Office of Domestic Commerce.

<sup>3</sup> Includes major additions and alterations.

<sup>4</sup> Excludes nonresidential building by privately owned public utilities.

<sup>5</sup> Excludes nonresidential building for military and naval facilities.

<sup>6</sup> Excludes expenditures to construct facilities used in atomic energy projects for 1920 through 1932, but the amount involved is negligible.

<sup>7</sup> Less than \$500,000.

<sup>8</sup> Includes primarily roads in National parks and forests. Federal contributions to State and local programs are included in those categories, which are shown above according to governmental ownership. For total amount of Federal expenditures and contributions for highway construction, see table 3, p. 5.

<sup>9</sup> Covers primarily publicly owned electric light and power systems, and local transit facilities.

<sup>10</sup> Covers miscellaneous construction items such as monuments, memorials, etc.

<sup>11</sup> Unavailable separately; included in total.

TABLE 2.—Expenditures for new construction put in place, in 1939 prices, by type of construction, selected years <sup>1</sup>

Type of construction	Expenditures (in millions of 1939 dollars)								
	1947	1946	1945	1942	1941	1940	1939	1933	1930
Total new construction <sup>2</sup> .....	7,344	6,553	3,500	10,390	9,339	6,858	6,307	2,728	7,857
Private construction.....	5,690	5,167	1,983	2,508	4,857	4,246	3,808	1,267	5,269
Residential building (nonfarm).....	2,698	1,977	472	1,117	2,469	2,268	2,114	358	1,453
Nonresidential building (nonfarm) <sup>3</sup> .....	1,500	2,006	725	504	1,314	990	785	531	2,146
Industrial.....	818	960	449	260	681	413	254	229	587
Commercial.....	406	708	149	127	371	338	287	167	846
Warehouses, office and loft buildings.....	120	204	42	49	108	85	76	52	548
Stores, restaurants, and garages.....	286	504	107	78	263	253	211	115	298
Other nonresidential building.....	276	338	127	117	262	239	244	135	713
Farm construction.....	180	180	110	207	265	232	226	82	171
Residential.....	96	106	65	108	150	123	120	51	94
Nonresidential.....	84	74	45	99	115	109	106	31	77
Public utilities.....	1,312	1,004	676	680	809	766	683	296	1,499
Railroads.....	183	163	183	164	169	163	137	101	470
Telephone and telegraph.....	304	204	87	130	161	118	93	49	286
Other public utilities.....	825	637	406	396	479	475	453	146	743
Public construction.....	1,654	1,386	1,517	7,882	4,482	2,612	2,499	1,461	2,588
Residential building.....	97	225	50	459	384	195	65	0	0
Nonresidential building <sup>4</sup> .....	234	197	475	2,718	1,353	533	859	260	625
Industrial <sup>5</sup> .....	13	48	340	2,537	1,073	150	23	3	( <sup>6</sup> )
Educational.....	126	62	44	97	125	130	418	57	345
Hospital and institutional.....	38	53	63	27	31	60	114	57	111
Other nonresidential.....	57	34	28	57	124	203	304	143	169
Military and naval facilities.....	102	115	501	3,796	1,456	372	125	47	30
Highway.....	632	454	251	405	702	892	867	766	1,275
Sewage disposal and water supply.....	198	134	76	122	156	191	162	101	356
Miscellaneous public service enterprises <sup>7</sup> .....	86	73	53	34	60	90	91	73	178
Conservation and development.....	236	166	102	305	329	304	310	209	115
All other public <sup>8</sup> .....	69	22	9	43	42	35	20	5	9

<sup>1</sup> Estimates of the Office of Domestic Commerce, U. S. Department of Commerce, revised as of April 1948. Construction expenditures represent the monetary value of the volume of work accomplished during the given period of time. Measurement of construction activity in 1939 prices was accomplished by deflating each class of construction by an appropriate construction cost index. For more detailed explanation of the method, see the Statistical Supplement to Construction Materials, monthly report of the Department of Commerce, for May 1948, pp. 29-40.

<sup>2</sup> Includes major additions and alterations.

<sup>3</sup> Excludes nonresidential building by privately owned public utilities.

<sup>4</sup> Excludes nonresidential building for military and naval facilities.

<sup>5</sup> Excludes expenditures to construct facilities used in atomic energy projects.

<sup>6</sup> Public industrial building not segregable from private for 1920 through 1932, but the amount involved is negligible.

<sup>7</sup> Covers primarily publicly owned electric light and power systems and local transit facilities.

<sup>8</sup> Covers miscellaneous construction items, such as monuments, memorials, etc.

Nearly four-fifths of all new construction put in place in 1947 was privately financed, as against slightly more than one-fifth during the war years 1942 and 1943. Yet public outlays for construction programs in 1947 were the highest recorded in any peacetime year. Of the public activity, less than two-fifths was financed by the Federal Government, compared with almost a half in 1946 and more than nine-tenths in 1942 when Federal expenditures were at an all-time high (table 3).

Construction expenditures <sup>1</sup> are a measure of the dollar value of construction work actually done. In addition to actual structures they include the installed value of equipment considered an integral part of a structure, but they exclude the value of land, machinery, and movable equipment. The value of major additions and alterations is considered a part of new construction.

<sup>1</sup> Estimates of construction expenditures are prepared jointly by the Bureau of Labor Statistics and the Office of Domestic Commerce, U. S. Department of Commerce.

Estimates of expenditures for private residential buildings are based on the valuation figures recorded on reports of building permits issued, which are submitted to the Bureau of Labor Statistics by local building officials. These data are adjusted to account for residential building activity in non-permit-issuing places, for permits issued but not used, and for the understatement of construction costs inherent in building permit valuations.

Separate estimates are made for each of several types of private nonresidential building, based upon records of contracts awarded as reported monthly by the F. W. Dodge Corp. Estimates for the other types of construction, Federal and non-Federal, are for the most part derived from reports obtained from other government agencies and private industry, as well as published sources such as the weekly periodical Engineering News-Record, the annual Budget of the United States Government, and the annual Financial Statistics of Cities.

TABLE 3.—Federal expenditures for new construction put in place, by type of construction, 1915-47<sup>1</sup>

Year	Federal expenditures (in millions)						All other Federal <sup>5</sup>
	Total new construction <sup>2</sup>	Residential building	Non-residential building <sup>3</sup>	Military and naval facilities	Highway <sup>4</sup>	Conservation and development	
1915.....	\$54	0	( <sup>6</sup> )	\$17	0	\$36	\$1
1916.....	50	0	( <sup>6</sup> )	21	0	28	1
1917.....	641	0	( <sup>6</sup> )	608	\$5	27	1
1918.....	1,624	\$23	( <sup>6</sup> )	1,555	11	29	1
1919.....	1,211	14	( <sup>6</sup> )	1,089	68	39	1
1920.....	316	0	( <sup>6</sup> )	161	99	55	1
1921.....	200	0	\$17	49	81	52	1
1922.....	178	0	21	25	82	48	2
1923.....	185	0	18	16	84	65	2
1924.....	202	0	13	9	100	79	1
1925.....	192	0	8	8	102	73	1
1926.....	177	0	8	11	95	61	2
1927.....	181	0	10	12	93	63	3
1928.....	207	0	14	15	96	72	10
1929.....	237	0	26	19	93	86	13
1930.....	338	0	43	29	146	111	9
1931.....	451	0	65	40	202	135	9
1932.....	510	0	133	34	198	139	6
1933.....	552	0	94	36	250	168	4
1934.....	720	0	80	47	326	245	22
1935.....	828	9	107	37	326	317	32
1936.....	1,262	61	345	29	392	339	96
1937.....	1,164	93	276	37	361	310	77
1938.....	989	32	245	62	285	299	65
1939.....	1,287	4	401	125	269	310	148
1940.....	1,397	4	362	285	248	310	88
1941.....	3,853	215	1,409	1,820	206	354	49
1942.....	9,544	393	3,546	5,016	187	350	82
1943.....	5,014	655	1,737	2,550	186	285	201
1944.....	1,912	182	576	337	119	163	35
1945.....	1,558	71	552	690	83	130	32
1946.....	1,074	304	127	188	181	240	34
1947.....	1,175	111	119	204	333	396	12

<sup>1</sup> Construction expenditures represent the monetary value of the volume of work accomplished during the given period of time. These figures should be differentiated from valuation data reported in the section on city building and from data on contract awards in appendix tables A-1 and A-2. Data on expenditures under Federal-aid programs cover only the portion contributed by the Federal Government.

<sup>2</sup> Includes major additions and alterations.  
<sup>3</sup> Excludes expenditures to construct facilities used in atomic energy projects and nonresidential building for military and naval facilities.

<sup>4</sup> Covers expenditures for federally owned highways, and contributions to State and local programs. (See also footnote 7, table 1, p. 3.)

<sup>5</sup> Includes projects such as airports, sewage disposal and water supply facilities, national cemeteries, monuments, and memorials.

<sup>6</sup> Unavailable.

### Monthly Trend

The first half of 1946 was marked by gains in all types of construction, reflecting not only the seasonal trend but also a continuation of the spurt in activity which got under way with the removal of wartime construction controls in October 1945. At midyear private commercial building leveled off, and in August started to decline steadily (table 4). At the same time industrial and other types of private nonresidential building, together with home construction, continued to increase. Thus, there became evident the first clear effects on expenditures of the restrictions on nonhousing

construction, initiated March 26. The limitation order (VHP-1) was issued to prevent the diversion of a disproportionate amount of materials and labor to unessential building. All structures actually started before the issuance of the order were free to go ahead, but those begun afterward required approval from the Civilian Production Administration for nonresidential projects and from the Federal Housing Administration for homes.

Commercial building was affected first by VHP-1 because less construction time was required to complete the backlog of work in this category started prior to March 26. Not only can commercial structures such as stores, restaurants, service stations, etc., be built in a shorter period than most industrial factories and warehouses, but the dollar volume of essential construction authorized by the Civilian Production Administration was less in commercial than in industrial building.

The monthly volume of private activity continued to speed ahead of public in 1946, intensifying the marked shift in importance between the two types which had begun in the middle of 1945. It had been expected that as construction of war plants and military installations dwindled to almost nothing, the usual peacetime programs of Federal, State, and local governments would swell the outlays for public construction. However, the rapidly developing materials shortages soon made it apparent that this would not be the case. On August 6, 1946, the Reconversion Director placed a moratorium on all Federal construction contracts until the end of the month, requiring that Federal agencies submit their construction programs for review by the Civilian Production Administration and the Housing Expediter. A number of agencies were ordered by the President to reduce specific contemplated expenditures, and others, to limit their programs as much as possible.

Increasing costs were another factor tending to lower the volume of public activity. More often than not, agencies received bids which far exceeded original estimates. In many instances this resulted in indefinite postponement of projects.

New construction as a whole did not start to decline until November, having been sustained in the early fall by a relatively high level of expenditures for building construction and for

TABLE 4.—Expenditures for new construction put in place, by type of construction, monthly, 1946-47<sup>1</sup>

Type of construction	Expenditures (in millions)												
	Total	De- cember	No- vember	Octo- ber	Sep- tember	Aug- ust	July	June	May	April	March	Febru- ary	Janu- ary
1947													
Total new construction <sup>2</sup> .....	\$13,977	\$1,320	\$1,432	\$1,497	\$1,423	\$1,364	\$1,264	\$1,162	\$1,032	\$928	\$859	\$823	\$873
Private construction.....	10,893	1,097	1,141	1,129	1,086	1,042	966	885	790	713	679	662	703
Residential building (nonfarm).....	5,260	610	630	590	540	500	455	405	355	310	285	280	300
Nonresidential building (nonfarm) <sup>3</sup> .....	3,131	284	287	275	267	260	254	250	242	238	241	258	275
Industrial.....	1,702	134	136	137	138	139	139	140	141	142	145	152	159
Commercial.....	835	91	93	82	75	69	67	65	58	53	52	61	69
Warehouses, office and loft build- ings.....	216	22	19	14	14	15	15	16	17	17	17	23	27
Stores, restaurants, and garages.....	619	69	74	68	61	54	52	49	41	36	35	38	42
Other nonresidential building.....	594	59	58	56	54	52	48	45	43	43	44	45	47
Religious.....	118	13	13	13	11	11	10	8	8	7	7	8	8
Educational.....	164	17	17	17	16	16	14	12	11	11	11	11	11
Hospital and institutional.....	107	9	9	8	9	9	9	9	9	9	9	9	9
Remaining types <sup>4</sup> .....	205	20	19	18	17	16	15	16	15	16	17	17	19
Farm construction.....	450	15	25	50	65	75	60	50	40	30	20	10	10
Public utilities.....	2,052	188	199	214	214	207	197	180	153	135	133	114	118
Railroad.....	318	28	30	32	33	33	31	27	23	22	20	18	21
Telephone and telegraph.....	510	55	53	59	54	46	44	40	31	25	38	33	32
Other public utilities.....	1,224	105	116	123	127	128	122	113	99	88	75	63	65
Public construction.....	3,084	223	291	368	337	322	298	277	242	215	180	161	170
Residential building.....	182	8	8	9	7	8	9	8	9	16	25	37	38
Nonresidential building <sup>5</sup> .....	505	52	50	53	49	45	42	43	42	40	34	27	28
Industrial <sup>6</sup> .....	25	0	0	1	1	2	2	3	4	3	3	3	5
Educational.....	275	32	29	27	26	25	23	24	23	22	19	13	12
Hospital and institutional.....	81	8	8	9	8	7	7	6	6	5	5	5	5
All other nonresidential.....	124	12	13	16	14	12	10	10	10	8	7	6	6
Military and naval facilities.....	204	17	19	23	22	22	19	15	15	15	12	12	13
Highways.....	1,233	65	119	178	159	149	137	125	100	76	50	36	39
Sewer and water.....	331	28	32	35	32	32	31	30	28	26	22	17	18
Miscellaneous public service enterprises <sup>7</sup> .....	117	8	10	11	12	12	11	11	10	9	9	7	7
Conservation and development.....	396	36	41	45	44	42	39	35	29	25	21	19	20
All other public <sup>8</sup> .....	116	9	12	14	12	12	10	10	9	8	7	6	7
1946													
Total new construction <sup>2</sup> .....	10,488	952	1,053	1,132	1,126	1,112	1,040	925	814	701	597	511	495
Private construction.....	8,253	751	800	849	863	864	819	745	662	575	492	430	403
Residential building (nonfarm).....	3,183	320	335	347	356	347	324	284	240	198	161	138	133
Nonresidential building (nonfarm) <sup>3</sup> .....	3,346	296	308	316	316	320	317	303	282	257	230	212	189
Industrial.....	1,689	166	171	171	167	159	149	138	128	119	113	108	100
Commercial.....	1,110	80	86	91	96	106	116	110	110	98	81	71	59
Warehouses, office and loft build- ings.....	309	32	35	36	35	33	30	25	22	20	16	14	11
Stores, restaurants, and garages.....	801	48	51	55	61	73	86	91	88	78	65	57	45
Other nonresidential building.....	547	60	51	54	53	55	52	49	44	40	36	33	30
Religious.....	72	8	8	8	7	7	6	6	5	4	4	4	4
Educational.....	115	12	12	12	12	11	11	10	9	8	7	6	5
Hospital and institutional.....	81	9	9	9	8	8	7	6	6	5	4	4	4
Remaining types <sup>4</sup> .....	279	21	20	25	26	28	26	26	24	22	20	19	17
Farm construction.....	350	10	20	40	60	60	50	40	30	20	14	8	8
Public utilities.....	1,374	125	137	146	141	137	128	118	110	100	87	72	73
Railroad.....	258	24	26	24	23	22	22	21	21	21	19	17	18
Telephone and telegraph.....	305	29	30	34	30	28	26	24	25	24	21	17	17
Other public utilities.....	811	72	81	88	88	87	80	73	64	55	47	38	38
Public construction.....	2,205	201	263	283	263	248	221	180	152	126	105	81	92
Residential building.....	369	52	73	59	43	37	32	25	21	12	9	4	2
Nonresidential building <sup>5</sup> .....	325	25	29	33	36	32	30	26	23	22	23	21	25
Industrial <sup>6</sup> .....	84	5	7	9	9	7	6	6	6	6	7	7	9
Educational.....	101	9	10	11	12	11	10	8	7	6	6	5	6
Hospital and institutional.....	85	5	6	7	8	8	8	8	7	7	7	6	7
All other nonresidential.....	55	6	6	6	7	6	6	4	2	3	3	3	3
Military and naval facilities.....	188	16	17	20	16	18	14	14	14	15	13	13	18
Highways.....	772	61	80	106	100	97	87	60	55	43	31	21	22
Sewer and water.....	194	18	20	24	26	23	20	16	12	10	9	7	9
Miscellaneous public service enterprises <sup>7</sup> .....	87	6	7	9	10	11	10	9	7	6	5	3	4
Conservation and development.....	240	21	25	30	29	27	25	18	17	15	12	11	10
All other public <sup>8</sup> .....	30	2	2	2	3	3	3	3	3	3	3	1	2

<sup>1</sup> Revised as of April 1948. Construction expenditures represent the monetary value of the volume of work accomplished during the given period of time. These figures should be differentiated from valuation data reported in the section on city building, pp. 31 to 42, and from data on value of Federal contract awards, appendix tables A-1 and A-2. These estimates were made jointly by the Office of Domestic Commerce, U. S. Department of Commerce, and by the Bureau of Labor Statistics, U. S. Department of Labor.

<sup>2</sup> Includes major additions and alterations.

<sup>3</sup> Excludes nonresidential building by privately owned public utilities.

<sup>4</sup> Includes social and recreational buildings, hotels, and miscellaneous buildings not elsewhere classified.

<sup>5</sup> Excludes nonresidential building for military and naval facilities.

<sup>6</sup> Excludes expenditures to construct facilities used in atomic energy projects.

<sup>7</sup> Covers primarily publicly owned electric light and power systems and local transit facilities.

<sup>8</sup> Covers miscellaneous construction items, such as monuments, memorials, etc.

utilities projects such as telephone, telegraph, and railroad facilities. In the closing months of the year, all types of construction followed the normal seasonal pattern, with the exception of privately financed religious, educational, and hospital and institutional building. Applications for priority ratings needed to complete construction or expand facilities in the two latter categories had been given particular consideration by the Civilian Production Administration.

In 1947 the monthly trend of dollars spent for new construction continued steadily upward until the last quarter of the year, when the onset of severe winter weather caused a slight decline. Peak expenditures of almost 1½ billion dollars in October had been equaled only once before—July 1942.

Divergent trends within the major types of construction activity were most noticeable in 1947. Homebuilding continued far ahead of other kinds of construction, and as the year advanced the gap between residential and industrial building widened. As a result of unprecedented demand, easing of credit for home construction, and greater availability of materials and labor, private builders put 65 percent more into nonfarm housing in 1947 than in the preceding year. Industrial construction, on the other hand, gradually leveled off during 1947 and expenditures for the 12 months were only slightly above the 1946 total. Management had become more sensitive to rising costs

and other unfavorable factors, since the edge had been taken off the backlog of urgent industrial needs by the great amount of new privately financed industrial building started immediately after the war and by the large volume of war plants sold or leased to industry by the Government.

After a spring slump, commercial building advanced rapidly in the summer and autumn months, reflecting the lifting of restrictions on all nonresidential construction (except amusement and recreation projects) with the passage of the Housing and Rent Act of 1947 in June. In spite of the contraseasonal rise in the final months of the year, 1947 expenditures for commercial construction failed by 25 percent to equal the large dollar volume for 1946.

Public expenditures for new construction gained more proportionally than private expenditures in 1947. In the fourth quarter, the public segment was 73 percent higher than in the first quarter, as against a rise of 65 percent for the private segment. Although rising costs still had a restraining effect on increased construction outlays by Government bodies, it was impossible to ignore any longer the growing needs in many areas arising from deferred projects and increasing population. Highway and road construction alone accounted for over half the increase in public expenditures during the year. Major gains were made also in new public school building, conservation and development work, and construction of sewer and water facilities.

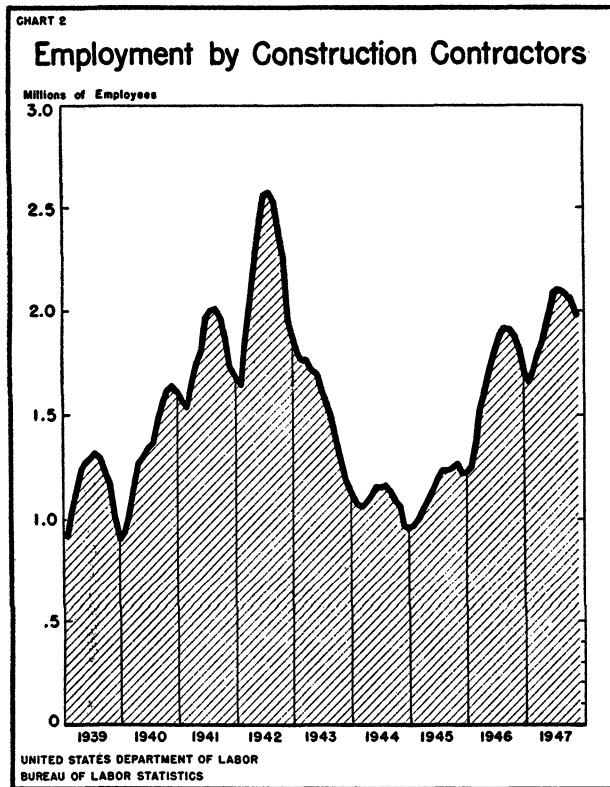
## *Construction Employment*

### **National Trends**

Construction contractors employed an average of nearly 2,000,000 workers in 1947—the largest number since 1942 when construction was at war peak. Except for the usual seasonal declines, construction employment rose almost steadily after VJ-day, as contractors pressed to meet the huge accumulation of civilian building needs that resulted during the war. In 1946, between the seasonal low in January and the peak in Septem-

ber, contractors took on about 700,000 employees, and construction employment reached an average of about 1,920,000. Nearly 190,000 more workers had been employed by the September peak in 1947, when employment stood at a little over 2,100,000. While this employment figure exceeded the immediate prewar experience in 1939–41, it failed to match the levels reached during the height of the war construction period in 1942. In contrast, the total of all civilian jobs in 1947 attained the highest level on record.

The reason for this is that postwar difficulties retarded construction longer than most other major industries. Materials shortages in 1946 lengthened construction time and often made efficient operations at the site impossible. These conditions added to construction costs, which were already near a new all-time record. Cost uncertainties particularly were dampening to construction activity, so that even though materials supply had vastly improved, 1947 got off to a comparatively poor start.



By the summer of 1947, however, there was good assurance that materials supply would continue adequate and the price structure would not collapse in the foreseeable future. A full-fledged construction boom got under way then, led by housebuilding. By the end of 1947 prospects were bright for an important construction year in 1948 that would bring construction employment to the record levels reached by industry generally during 1947.

It is unlikely, however, that in a peacetime year construction employment will attain the importance in the whole employment picture that it held

during 1942, when 5½ percent of all workers in nonagricultural establishments were employed by construction contractors. This was a wartime phenomenon, reflecting the feverish haste with which industrial plant and military facilities expansion was taking place during the early war period. Construction has not claimed this proportion of all nonagricultural employment at any other time during the years for which reports are available—1929 to date.

TABLE 5.—Employment by construction contractors, monthly, 1939-47<sup>1</sup>

Month	Employment (in thousands)								
	1947	1946	1945	1944	1943	1942	1941	1940	1939
Monthly average.....	1,921	1,661	1,132	1,094	1,567	2,170	1,790	1,294	1,150
January.....	1,690	1,220	950	1,114	1,835	1,675	1,606	904	927
February.....	1,668	1,251	959	1,068	1,780	1,649	1,567	930	916
March.....	1,709	1,375	1,002	1,061	1,764	1,834	1,532	1,015	1,035
April.....	1,798	1,528	1,053	1,075	1,741	2,040	1,644	1,146	1,132
May.....	1,855	1,617	1,093	1,100	1,694	2,222	1,738	1,260	1,234
June.....	1,957	1,701	1,147	1,147	1,669	2,403	1,803	1,300	1,272
July.....	2,043	1,802	1,187	1,153	1,580	2,565	1,956	1,342	1,285
August.....	2,096	1,887	1,232	1,157	1,524	2,577	2,014	1,371	1,312
September.....	2,107	1,923	1,232	1,125	1,451	2,530	2,035	1,469	1,285
October.....	2,099	1,910	1,252	1,092	1,343	2,370	1,969	1,550	1,234
November.....	2,046	1,887	1,266	1,057	1,272	2,212	1,879	1,607	1,161
December.....	1,978	1,826	1,215	969	1,147	1,957	1,734	1,629	1,010

<sup>1</sup> The data cover all site and off-site wage and salaried employees of private firms whose major activity is construction, but exclude self-employed construction workers, working proprietors, and force-account employees of non-construction firms and public agencies engaged in construction activities. (Force-account work is done, not through a contractor, but directly by a business or government agency using a separate work force to perform non-maintenance construction on the agency's own properties.)

The estimates are based primarily on reports by construction firms to unemployment compensation agencies and to the Bureau of Old-Age and Survivors Insurance, adjusted currently in accordance with monthly reports to the Bureau of Labor Statistics or to cooperating State agencies from a sample of firms in each State. They are prepared as a segment of the Bureau of Labor Statistics nonagricultural employment series.

In 1929 at the end of the construction boom of the twenties and again in 1941, the preparedness period, construction contractors provided nearly 5 percent of all nonagricultural jobs—still an extraordinary proportion. The effectiveness of Government regulations prohibiting nonessential construction during World War II is clear from the fact that the number of jobs in construction establishments shrank to only a little over 2½ percent of all nonagricultural jobs in 1944, when the war building program was coming to an end. Not even in the depression years 1933-34 did construction claim so small a part of total nonfarm employment. In 1947 the percentage was almost 4½ percent, construction having moved up to a somewhat more important place in the employment picture than it held before the war.

Employment estimates cover all full- and part-time wage and salaried employees. In the case of construction employment, they cover all site and off-site wage and salaried employees of private firms whose major activity is construction. They exclude self-employed construction workers, working proprietors, and force-account employees<sup>2</sup>

TABLE 6.—*Employment by construction contractors, compared with nonagricultural employment, 1929-47*<sup>1</sup>

Year	Average monthly employment (in thousands)		Contract construction employment as percent of employment in all nonagricultural establishments
	All nonagricultural establishments	Contract construction	
1929.....	31,041	1,497	4.8
1930.....	29,143	1,372	4.7
1931.....	26,383	1,214	4.6
1932.....	23,377	970	4.1
1933.....	23,466	809	3.4
1934.....	25,699	862	3.4
1935.....	26,792	912	3.4
1936.....	28,802	1,145	4.0
1937.....	30,718	1,112	3.6
1938.....	28,902	1,055	3.7
1939.....	30,287	1,150	3.8
1940.....	32,031	1,294	4.0
1941.....	36,164	1,790	4.9
1942.....	39,697	2,170	5.5
1943.....	42,042	1,567	3.7
1944.....	41,480	1,094	2.6
1945.....	40,069	1,132	2.8
1946.....	41,494	1,661	4.0
1947.....	43,970	1,921	4.4

<sup>1</sup> The estimates cover all full- and part-time wage and salaried employees. They are based primarily on employers' reports to unemployment compensation agencies and to the Bureau of Old-Age and Survivors Insurance, adjusted currently in accordance with monthly reports to the Bureau of Labor Statistics or to cooperating State agencies from a sample of firms in each State.

The data on construction cover all site and off-site wage and salaried employees of private firms whose major activity is construction, but exclude self-employed construction workers, working proprietors, and force-account employees of nonconstruction firms and public agencies engaged in construction activities. (Force-account work is done, not through a contractor, but directly by a business or government agency using a separate work force to perform nonmaintenance construction on the agency's own properties.)

of nonconstruction firms and public agencies that engage in construction.

All the employment estimates are based currently on monthly reports to the Bureau of Labor Statistics or to State agencies from a representative group of firms in each State. The base figures to which these monthly reports are applied are summaries from employers' reports to unemployment compensation agencies and the Bureau of Old-Age and Survivors Insurance. Adjustments are made regularly for small firms not liable to

<sup>2</sup> Force-account employees are workers hired not through a contractor, but directly by a business or government agency, and utilized as a separate work force to perform nonmaintenance construction work on the agency's own properties.

the unemployment compensation provisions of State laws and for new firms established subsequent to base periods.<sup>3</sup>

### Leading States

In 1947, 6 States claimed about 45 percent of all the workers employed by construction contractors.<sup>4</sup> These States, in order of the average number of construction workers employed, were California,<sup>5</sup> New York (185,600), Pennsylvania (122,200), Texas (112,600), Illinois (104,500), and Ohio (95,100). They were well above the others in construction employment, and, in fact, had been in the lead in this respect for several years, but with varying relative standings.

Data by States are available from 1943. From 1943 to 1947 California was first in construction employment, followed by New York. It is no surprise that California placed first during the war in view of her leading position in war facilities expansion, largely of aircraft and shipyard plant. In addition, California was far ahead in the amount of emergency housing built for war workers. This was in response to the need for accommodating the largest crew of in-migrant labor to arrive in any State. California has continued in the lead during the postwar period, reflecting sustained economic prosperity there even with drastic curtailment in war work.

While Texas was in fourth or fifth place during 1945-47, this Southwestern State placed third after California and New York in 1943 and 1944. This reflects the fact that Texas ranked next only to California in the proportion claimed of total dollar commitments for war facilities expansion during the defense and war period. Nearly two-fifths of the war construction in Texas was for chemicals or petroleum products facilities, and a

<sup>3</sup> For a more detailed explanation of the method by which nonagricultural and contract construction employment estimates are derived, see Bull. 916, Handbook of Labor Statistics of the U. S. Bureau of Labor Statistics, 1947 edition, pp. 2-4.

<sup>4</sup> A average construction employment by States is available only for the first half of 1947. (See tables 7 and 8.) Although the Bureau of Labor Statistics obtained monthly reports from sample firms in all other States from July to December 1947 for use in compiling the United States total, it did not have the facilities after June 1947 to prepare individual State estimates. If data for the rest of this year were included in the averages, the figures would in general be somewhat higher.

<sup>5</sup> It is estimated roughly that construction contractors employed an average of somewhat more than 187,000 workers during the first half of 1947 in California. Construction employment estimates comparable to those for other States are not available for California and New Mexico.

TABLE 7.—Employment by construction contractors, by region and State, 1943-47<sup>1</sup>

Region and State	Average monthly employment (in thousands)					Region and State	Average monthly employment (in thousands)				
	1947 (first 6 months) <sup>2</sup>	1946	1945	1944	1943		1947 (first 6 months) <sup>2</sup>	1946	1945	1944	1943
Total United States.....	1,781.0	1,660.6	1,132.3	1,093.8	1,566.6						
New England.....	111.4	108.4	69.7	62.9	84.5	South Atlantic—Continued.					
Connecticut.....	27.4	25.9	15.2	14.1	17.6	Georgia.....	34.3	28.4	16.6	17.6	34.0
Maine.....	9.7	9.0	5.0	5.0	10.1	Maryland.....	41.7	36.2	24.0	24.6	44.0
Massachusetts.....	55.6	54.7	36.6	31.7	36.3	North Carolina.....	39.5	34.2	17.0	17.0	35.8
New Hampshire.....	6.1	6.4	3.1	2.4	3.0	South Carolina.....	19.9	16.5	8.8	9.6	16.5
Rhode Island.....	8.8	8.8	8.3	8.6	16.2	Virginia.....	40.2	35.4	25.5	27.7	54.7
Vermont.....	3.8	3.6	1.5	1.1	1.3	West Virginia.....	15.6	13.2	9.3	7.9	14.7
Middle Atlantic.....	368.9	350.7	223.2	209.0	267.1	East South Central.....	84.8	80.2	79.3	87.8	112.6
New Jersey.....	61.1	60.2	38.9	38.5	47.5	Alabama.....	20.9	19.7	13.9	12.0	25.4
New York.....	185.6	171.7	107.8	100.7	123.8	Kentucky.....	18.1	17.4	11.6	11.4	19.0
Pennsylvania.....	122.2	118.8	76.5	69.8	95.8	Mississippi.....	13.8	12.7	8.6	9.0	15.7
Tennessee.....						Tennessee.....	32.0	30.4	45.2	55.4	52.5
East North Central.....	335.0	313.0	210.5	189.8	256.9	West South Central.....	172.4	149.1	110.9	116.9	221.3
Illinois.....	104.5	88.1	63.3	59.5	81.2	Arkansas.....	13.2	13.2	19.0	7.0	18.9
Indiana.....	44.1	39.4	30.0	24.4	36.6	Louisiana.....	25.0	25.6	18.7	27.4	49.4
Michigan.....	55.7	58.1	36.4	32.5	47.4	Oklahoma.....	21.6	18.0	10.1	10.6	30.4
Ohio.....	95.1	92.4	55.0	52.2	70.3	Texas.....	112.6	92.3	63.1	71.9	122.6
Wisconsin.....	35.6	35.0	25.8	21.2	21.4	Mountain.....					
West North Central.....	134.6	130.2	84.0	70.0	113.9	Arizona.....	10.5	8.9	6.0	5.3	14.0
Iowa.....	25.5	24.0	13.8	12.0	13.7	Colorado.....	14.8	12.8	8.7	6.9	10.8
Kansas.....	19.9	18.1	13.0	12.1	34.8	Idaho.....	6.2	5.4	3.4	3.8	6.0
Minnesota.....	27.7	29.4	19.0	15.7	18.1	Montana.....	6.0	5.8	3.7	3.1	3.3
Missouri.....	40.8	39.8	26.8	19.6	28.4	Nevada.....	5.0	5.5	3.4	2.6	7.5
Nebraska.....	12.2	11.6	7.7	7.5	24.7	New Mexico <sup>3</sup> .....					
North Dakota.....	3.9	3.6	1.7	1.5	1.4	Utah.....	8.2	7.7	5.4	9.2	22.2
South Dakota.....	4.6	3.7	2.0	1.6	2.8	Wyoming.....	4.8	4.1	2.4	3.4	3.9
South Atlantic.....	259.9	229.8	143.4	143.8	204.8	Pacific.....					
Delaware.....	6.1	6.2	3.4	3.2	5.5	California <sup>3</sup> .....					
District of Columbia.....	17.7	16.7	12.6	12.3	17.1	Oregon.....	21.4	20.4	13.0	14.4	17.9
Florida.....	44.9	43.0	26.2	23.9	42.5	Washington.....	35.9	35.0	26.7	55.2	45.0

<sup>1</sup> The data cover all site and off-site wage and salaried employees of private firms whose major activity is construction, but exclude self-employed construction workers, working proprietors, and force-account employees of non-construction firms and public agencies engaged in construction activities. (Force-account work is done, not through a contractor, but directly by a business or government agency using a separate work force to perform non-maintenance construction on the agency's own properties.)

The estimates are based primarily on reports by construction firms to unemployment compensation agencies and to the Bureau of Old-Age and Survivors Insurance, adjusted currently in accordance with monthly reports to the Bureau of Labor Statistics or to cooperating State agencies from a sample of firms in each State.

<sup>2</sup> Data for the remainder of 1947 are not available except for the following 12 States: Connecticut, Illinois, Louisiana, Maryland, Minnesota, Montana, New Jersey, New York, Pennsylvania, Rhode Island, Texas, and Wisconsin. These States are those in which cooperative arrangements have been developed with State agencies to compile current benchmarks, solicit reports from sample firms, and prepare monthly estimates. Although the Bureau of Labor Statistics obtained monthly reports from sample firms in all other States from July to December 1947, for use in compiling the United States total, it did not have the facilities after June 1947 to prepare individual State estimates.

<sup>3</sup> No estimates were prepared for this State.

large part of the remainder was for barracks, cantonments, or other military or naval installations, for explosives and ammunition loading plants, and for war housing to accommodate the labor to man these facilities.

Ohio stepped down from among the "big six" in construction employment during 1944 in favor of Tennessee and Washington, which were practically tied for sixth place that year when construction of the Oak Ridge and Hanford atomic energy plants was in full swing.

### Geographic Shifts

In general, the North and far West gained while the South lost in construction employment between 1943 and the postwar years 1946-47. If data for the period 1939 through 1942 were available, they probably would reveal that this shift was a readjustment to prewar relationships. The

gain in the North was greatest in the New England and Middle Atlantic States, which are primarily industrial and provided a considerable quantity of existing plant for war production. The obsolescence of these plants as well as reconversion needs gave added impetus to the postwar construction spurt in these regions. On the other hand, wartime construction in the South had usually meant erecting entirely new facilities. These, when convertible, were available for peacetime civilian needs. Also, because of its climate and available acreage in large tracts the South became the location of many military installations and cantonments. Their construction required a large labor force which had to be diverted later to other types of projects. Losses in construction employment in the South—war to postwar—were especially sharp in Virginia and Tennessee in the more easterly regions, and in Louisiana, Oklahoma, and Texas in the more westerly.



TABLE 8.—Employment by construction contractors, by region and State, 1 quarterly 1943-47

Region and State	Average quarterly employment (in thousands)																	
	1947		1946				1945				1944				1943			
	Second quarter	First quarter	Fourth quarter	Third quarter	Second quarter	First quarter	Fourth quarter	Third quarter	Second quarter	First quarter	Fourth quarter	Third quarter	Second quarter	First quarter	Fourth quarter	Third quarter	Second quarter	First quarter
Total, United States.....	1,873.2	1,688.9	1,874.1	1,870.7	1,615.5	1,282.1	1,244.3	1,217.1	1,097.6	970.4	1,039.7	1,144.9	1,110.2	1,080.6	1,253.7	1,518.5	1,701.3	1,792.7
New England.....	120.9	102.6	122.7	124.7	105.6	80.9	83.0	74.7	64.5	56.6	63.3	66.4	61.7	60.1	70.0	86.9	90.1	91.5
Connecticut.....	29.2	25.5	29.5	28.8	25.7	19.6	18.9	16.1	13.7	11.9	14.3	14.9	14.0	13.1	15.3	18.2	19.1	17.6
Maine.....	11.2	8.3	10.4	10.7	8.8	6.2	6.3	5.8	4.3	3.7	4.9	5.6	4.8	4.6	6.8	11.0	11.7	11.1
Massachusetts.....	59.9	51.9	61.5	63.7	52.3	41.5	42.9	38.7	34.3	30.6	32.5	33.3	30.9	30.2	34.1	37.4	37.1	36.8
New Hampshire.....	6.8	5.5	7.5	7.6	6.3	4.2	4.2	3.4	2.8	2.1	2.7	2.6	2.2	2.0	2.9	3.3	3.1	2.7
Rhode Island.....	9.6	8.0	9.6	9.5	9.1	7.1	8.5	9.1	8.2	7.4	7.7	8.7	8.8	9.1	9.3	15.5	18.0	22.1
Vermont.....	4.2	3.4	4.2	4.4	3.4	2.3	2.2	1.6	1.2	0.9	1.2	1.3	1.0	1.1	1.6	1.5	1.1	1.2
Middle Atlantic.....	391.1	346.6	410.6	394.7	338.1	259.0	254.7	237.4	211.9	188.6	210.9	217.8	209.2	198.5	241.8	271.0	279.2	276.3
New Jersey.....	63.1	59.0	67.5	65.3	61.0	46.8	47.7	40.6	34.9	32.4	34.5	37.7	41.5	40.3	46.0	49.9	49.5	49.7
New York.....	195.9	175.2	208.2	193.8	161.2	123.5	119.7	115.5	103.2	92.8	105.0	107.2	99.0	91.8	111.6	124.6	127.7	131.4
Pennsylvania.....	132.1	112.4	134.9	135.6	115.9	88.7	87.3	81.3	73.8	63.4	71.4	72.9	68.7	66.4	84.2	101.5	102.0	95.2
East North Central.....	355.2	319.3	354.0	350.9	305.9	240.9	241.6	231.9	201.2	167.3	189.3	206.1	187.9	175.8	219.3	263.7	271.1	273.4
Illinois.....	115.4	101.1	100.4	95.6	86.5	69.7	72.6	69.5	60.0	50.9	58.2	64.5	59.6	55.8	67.9	82.3	84.4	90.1
Indiana.....	47.0	41.1	44.9	43.6	37.7	31.6	30.5	33.6	31.8	24.1	25.5	27.3	24.1	20.7	27.5	37.8	40.8	40.2
Michigan.....	55.3	55.2	64.7	66.4	58.3	43.1	45.4	42.3	32.1	26.0	33.0	34.2	31.5	31.4	41.0	47.3	49.8	51.7
Ohio.....	101.2	88.9	103.6	105.5	90.0	70.3	66.6	60.9	51.4	41.1	48.3	56.2	53.1	51.1	64.0	70.2	73.4	67.5
Wisconsin.....	36.3	33.0	40.4	39.8	33.4	26.2	26.5	25.6	25.9	25.2	24.3	23.9	19.6	16.8	18.9	20.1	22.7	23.9
West North Central.....	148.5	128.6	147.6	150.7	127.1	96.8	95.7	90.7	78.9	70.7	78.0	80.0	63.9	58.1	78.0	103.0	133.8	140.9
Iowa.....	27.3	23.7	29.2	28.4	22.4	16.2	16.9	14.8	12.7	10.7	13.3	14.0	11.4	9.3	11.8	14.3	16.7	12.1
Kansas.....	21.6	18.2	20.1	20.2	17.5	14.5	13.2	13.4	12.3	11.5	13.6	11.5	12.9	12.0	16.2	24.0	44.0	55.2
Minnesota.....	34.7	28.8	32.1	34.2	30.0	21.3	21.4	19.6	17.8	17.3	19.3	17.9	13.6	11.9	15.8	18.7	17.4	20.3
Missouri.....	40.6	40.9	45.3	44.8	38.2	31.0	30.7	29.9	24.4	22.2	23.1	21.5	17.3	16.3	22.4	27.1	30.0	33.9
Nebraska.....	14.6	9.8	11.9	13.9	12.1	8.5	9.0	8.5	7.1	6.1	7.8	8.9	7.1	6.3	8.4	13.2	21.2	16.1
North Dakota.....	4.6	3.2	4.4	4.7	3.5	1.9	2.0	2.2	1.7	1.0	1.4	2.1	1.5	1.2	2.2	2.2	1.4	2.8
South Dakota.....	5.2	4.0	4.6	4.5	3.4	2.4	2.5	2.3	1.8	1.3	1.6	2.0	1.5	1.2	3.5	3.1	2.5	2.5
South Atlantic.....	274.2	245.3	262.5	257.9	220.2	179.7	166.8	152.8	136.4	118.0	130.7	148.6	146.0	150.2	186.5	243.7	294.2	335.1
Delaware.....	6.5	5.6	6.9	7.1	6.6	4.4	4.5	3.6	3.0	2.6	3.0	3.3	3.3	3.3	4.3	6.4	6.2	5.3
District of Columbia.....	19.0	16.4	17.7	18.2	16.9	15.9	13.6	13.1	12.7	10.9	12.1	12.8	12.1	12.0	14.2	15.6	19.0	19.7
Florida.....	45.1	44.6	47.9	45.6	40.6	37.7	33.5	28.3	23.5	19.7	22.3	24.2	23.1	22.9	32.9	43.7	45.7	47.8
Georgia.....	35.9	32.7	33.7	33.1	29.0	21.1	19.6	18.7	15.3	12.7	15.2	18.7	18.5	18.2	23.7	31.1	35.2	46.0
Maryland.....	46.0	37.4	40.4	40.4	36.0	28.2	27.2	25.8	23.2	19.9	20.7	24.5	26.5	26.9	31.7	40.4	52.4	51.4
North Carolina.....	40.6	36.4	40.0	38.6	33.0	25.4	21.5	18.1	15.2	13.3	14.4	16.7	18.2	18.8	24.3	30.7	38.2	50.0
South Carolina.....	21.1	18.6	19.6	19.3	15.5	11.8	10.2	9.6	8.1	7.0	8.5	10.2	9.5	10.0	12.1	15.6	16.6	21.4
Virginia.....	42.9	37.1	40.1	40.7	33.3	27.6	26.8	26.1	28.3	22.7	25.9	28.8	27.3	28.7	35.4	47.6	62.5	73.6
West Virginia.....	17.1	14.1	16.2	14.9	12.2	9.6	9.9	9.5	9.2	8.6	9.4	7.5	7.5	6.1	7.9	12.6	18.4	19.9
East South Central.....	90.7	79.0	89.0	91.7	77.1	62.2	68.7	81.6	84.9	81.9	78.7	90.3	92.5	80.8	91.5	107.4	120.2	131.4
Alabama.....	22.3	19.6	21.8	23.1	19.6	14.2	13.0	11.0	10.0	9.1	11.0	12.7	12.0	12.4	16.6	21.5	28.5	34.9
Kentucky.....	19.5	16.7	20.4	20.1	16.2	12.9	13.1	14.4	15.2	14.8	11.0	11.5	11.2	9.9	12.8	21.2	21.9	20.1
Mississippi.....	14.8	12.8	16.1	15.0	10.8	9.2	9.1	9.4	8.0	7.8	9.2	9.7	8.0	8.2	8.5	14.0	17.2	23.1
Tennessee.....	34.1	29.9	31.6	33.5	30.5	25.9	33.0	45.0	51.6	51.3	47.0	54.8	60.4	59.3	53.6	60.7	62.6	63.3
West South Central.....	185.2	169.7	163.8	170.3	144.5	113.1	108.6	119.3	112.9	102.5	94.9	109.7	120.6	141.9	167.5	212.8	247.1	256.7
Arkansas.....	13.4	12.9	14.3	15.9	12.8	9.7	10.0	22.0	23.2	20.7	8.1	6.6	5.8	7.4	11.4	16.6	21.9	25.7
Louisiana.....	30.6	29.5	27.1	31.2	23.9	20.4	19.0	19.5	18.2	17.9	19.9	24.8	30.1	34.6	39.4	51.3	52.0	54.8
Oklahoma.....	21.9	21.3	21.2	21.7	16.5	12.7	12.0	11.2	8.9	8.3	8.8	10.1	10.0	13.4	16.9	28.0	33.8	43.1
Texas.....	119.3	106.0	101.2	101.5	91.3	75.3	67.6	66.6	62.6	55.6	58.1	68.2	74.7	86.5	99.8	116.9	140.2	133.5
Mountain.....	11.0	10.1	9.8	9.9	8.4	7.5	6.6	6.1	6.0	5.3	5.0	5.3	5.4	5.5	9.4	12.1	12.7	17.0
Arizona.....	15.4	14.2	14.7	14.7	12.4	9.3	8.6	10.0	9.4	6.8	7.4	7.7	6.4	6.2	7.7	10.9	10.7	15.4
Idaho.....	7.2	5.2	6.8	6.7	4.8	3.4	3.9	3.5	3.3	3.0	3.7	3.6	3.7	4.1	6.3	7.8	7.8	5.0
Montana.....	6.9	5.1	6.3	7.3	5.9	3.8	4.4	4.2	3.5	2.8	3.3	3.6	3.0	2.7	3.6	3.4	3.3	3.0
New Mexico.....																		
Nevada.....	4.8	5.1	5.8	6.4	5.8	3.9	3.8	4.3	3.5	2.1	1.9	2.6	3.1	2.8	4.3	4.6	8.9	12.3
Utah.....	9.2	7.1	8.8	9.2	7.6	5.1	5.7	5.5	6.0	5.3	6.9	8.0	9.4	12.5	18.7	20.3	22.0	27.8
Wyoming.....	5.8	3.7	5.0	5.5	3.8	2.0	2.7	2.8	2.4	1.8	2.9	3.6	3.0	4.2	5.0	3.8	3.9	2.8
Pacific.....																		
California.....	22.6	20.2	22.7	23.9	20.0	15.2	14.5	14.2	12.2	11.1	13.9	14.7	14.8	14.1	14.9	17.0	19.9	20.0
Oregon.....	39.4	32.3	37.3	41.1	35.0	26.5	25.0	27.6	25.1	29.1	46.4	60.0	61.1	63.2	46.9	47.1	45.9	39.8
Washington.....																		

CONSTRUCTION EMPLOYMENT

<sup>1</sup> The data cover all site and off-site wage and salaried employees of private firms whose major activity is construction, but exclude self-employed construction workers, working proprietors, and force account employees of nonconstruction firms and public agencies engaged in construction activities. (Force-account work is done, not through a contractor, but directly by a business or Government agency using a separate work force to perform nonmaintenance construction on the agency's own properties.)

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<sup>2</sup> Data for the remainder of 1947 are not available except for the following 12 States: Connecticut, Illinois, Louisiana, Maryland, Minnesota, Montana, New Jersey, New York, Pennsylvania, Rhode Island, Texas, and Wisconsin. These States are those in which cooperative arrangements have been developed with State agencies to compile current benchmarks, solicit reports from sample firms, and prepare monthly estimates. Although the Bureau of Labor Statistics obtained monthly reports from sample firms in all other States from July to December 1947, for use in compiling the United States total, it did not have the facilities after June 1947 to prepare individual State estimates.

<sup>3</sup> No estimates were prepared for this State.

California contractors, unlike those in most other States where construction activity was especially high during the war, employed more construction workers in 1946-47 than in 1943—in fact, well over 40,000 more. This is because California experienced unexpectedly great post-war prosperity which led to considerable investment in new construction and to easy absorption of its swollen wartime labor supply, in spite of the drastic curtailment of shipyard and aircraft activities right after VJ-day. In the Pacific Northwest on the other hand, construction contractors employed somewhat more labor in 1946-47 than in 1943 in Oregon but considerably less in Washington. Thus, the picture in the far West is mixed, although in all parts of the region, construction employment rose after 1945 when the war ended. This, in fact, has been true in every State except Tennessee and Arkansas, reflecting the comparative strength of the economy generally after speedy reconversion.

While construction employment increased nationally between 1943 and 1946, it held in 1946 only a slightly better position in the entire non-farm picture than in 1943, accounting for about 4 percent of all nonagricultural jobs. Different States and parts of the country behaved differently in this respect, however. For example, in the North and West areas the gains in construction were large enough to increase their share of all nonfarm jobs between 1943 and 1946. On the other hand, the losses in the South kept construction in this area from maintaining as important a place in the employment picture as attained during the war. In general, by 1946 the Southern and Western States were still above the national average in the proportion of all nonagricultural employment claimed by construction, as they were in 1943, while the Northern States were somewhat below the national average.

Construction employment rose after the war in practically all parts of the country. Contractors employed more construction labor the first half of 1947 than in 1946 in all but 8 States, and in every one of the 8 the difference in employment between the two periods was slight, if indeed any change had occurred at all. The number of construction workers rose most in 1947 in Texas where an average of 20,000 recruits were taken on. Construction contractors added an average of 16,000 workers in California and 14,000 in New York be-

tween 1946 and the first half of 1947. The rise in construction employment nationally during this period averaged 120,000 workers, almost 80 percent of whom were added in only four geographic divisions—the South Atlantic, West South Central, East North Central, and Middle Atlantic, in order of the average number of additional construction workers taken on.

### Irregularity of Construction Employment

Even in the most active construction periods, construction workers are seldom regularly employed throughout the year. The nature of the work is such that only those working for contractors who can afford to maintain a steady crew and move it from site to site may avoid the usual lay-off between jobs. And even under the best of circumstances, the vagaries of the weather may upset work schedules and necessitate time off.

A glance at table 5 will show that it is not uncommon for as many as half a million construction workers to be taken on and let go within a single year. To get a rough idea of how many workers could possibly be employed throughout the year on construction, we might take the ratio of the month of lowest average employment, as shown in table 5, to that of highest average employment each year. The result indicates that the number of workers who could have been employed all of the year amounted to somewhat more than half the number in the month of highest average employment in 1940, three-fourths in 1941, and as much as four-fifths in 1944, but declined to around three-fifths in 1946. The ratio climbed to nearly four-fifths in 1947.

Actually the degree of regularity in construction employment is less than total employment figures can reveal, since the latter do not take into account the turn-over of individual workers. Case history material for 1943 has been summarized by the Bureau in some special tabulations compiled from old-age and survivors insurance reports. These reports were made to the Social Security Administration by employers concerning individual workers. Table 9 presents some of the results. More recent studies have not been possible, but 1943 is a fairly good period for analysis since it was a year of relatively high though gradually declining employment.

The data show that among a 3-percent sample

of construction workers, well over half supplemented their earnings during the year by employment in other industries. Of the workers employed in the construction industry alone, only about a fourth worked in all four quarters of the year. It is possible, of course, that the others may have been employed the rest of the time in occupations not covered by the old-age and survivors insurance program. Some may have been self-employed.

Even so, the evidence is clear that the construction industry itself afforded substantially less than full employment to a large proportion of its labor in 1943. Yet in 1943, construction contractors employed an average of more than 1,500,000 workers monthly, well over the number employed in the prewar years 1939 and 1940, when construction was making a rapid peacetime recovery.

TABLE 9.—Percentage distribution of male construction workers classified by regularity of employment and type of employing contractor, 1943

Type of employing contractor	All covered construction workers <sup>1</sup>	Workers employed only in construction			Workers employed in construction and in other covered industries		
		Percent of all covered workers	Percent working—		Percent of all covered workers	Percent working—	
			In all 4 quarters of the year	In less than 4 quarters of the year		In all 4 quarters of the year	In less than 4 quarters of the year
All contractors.....	100.0	43.6	26.3	73.7	56.4	59.4	40.6
General building contractors <sup>2</sup> .....	100.0	41.5	21.6	78.4	58.5	58.2	41.8
General contractors, other than building.....	100.0	45.9	19.9	80.1	54.1	54.2	45.8
Special building trades contractors.....	100.0	43.7	39.0	61.0	56.3	66.1	33.9

<sup>1</sup> A 3-percent sample of male workers covered by old-age and survivors insurance and classified as construction workers. Principal exclusions from coverage by the Social Security Act are agricultural labor; domestic service in private homes; employment covered by the Railroad Retirement Act; employment by Federal, State, and local governments and by certain of their instrumentalities; service in nonprofit organizations; and casual labor in activities outside the ordinary course of an employer's business. Workers have been classified as construction workers if employed by a construction

contractor during their last "covered" employment in the year. Workers may have been self-employed, unemployed, or employed in "uncovered" work in any or all of the quarters in which they were engaged in "covered" work, and, of course, in the quarters when not engaged in "covered" work. The basic data were furnished to the Bureau of Labor Statistics by the Social Security Administration from its records.

<sup>2</sup> Includes speculative builders, subdividers, and developers.

## Comparative Labor Requirements

### Different Kinds of Construction

Because of the complexities of the construction industry, arising largely from lack of a fixed locality and steady operations, all aspects of construction employment cannot be measured in the same way. In the previous section national and State employment data have been presented, based on reports from individual construction firms to government agencies. It has been impossible to obtain from such reports the detail necessary to separate employment according to the kind of construction work performed and the skill or occupation of the workers. The moving of labor from site to site, the staggering of accessions and layoffs among construction crews according to a project's nearness to completion, and many other fea-

tures necessarily characteristic of labor practices in construction establishments would make the regular reporting of any but gross employment figures a prohibitive task for private contracting. Yet there is important need for information about the extent of the labor force claimed by the various kinds of construction—highway work, residential and nonresidential building construction, etc.—and the skills and occupations of the workers doing the job.

Since reports from contracting establishments, the most precise source, cannot be secured to yield this information, another estimating method has been developed. This involves converting figures on the dollars spent for the various kinds of new construction each month (see tables 1 to 4) into estimated man-months of work, using a factor

representing the value of work put in place per man per hour.<sup>6</sup> For distribution by skill and occupation, data from actual field observations made on construction projects of various kinds and sizes are applied to the results.

The figures derived by this method are not employment figures, in the same way as those developed from employment reports. They are, instead, an approximate measurement, in terms of number of workers, of the labor required to put in place the dollar volume of new construction reported for any period.

Since the basic data (dollar volume) cover the entire value of the work put in place, all the labor charged to the construction must be included—working proprietors and the self-employed, as well

<sup>6</sup> See tables 10 and 11, footnote 1, for details on the conversion method.

as wage and salaried employees. Only the latter are counted in the employment reports. In addition, since all new construction is covered by the figures derived from dollar volume, new projects undertaken under force account are included.<sup>7</sup> Such projects are excluded from the employment figures, which represent employment only by construction contractors. Also contractors' employees may work on all kinds of construction work, repair and maintenance projects as well as new construction, but the figures on labor requirements by kind of work and occupation have been developed only for new projects.<sup>8</sup>

<sup>7</sup> See footnote 2, p. 9.

<sup>8</sup> It should be cautioned that, because sufficient information is lacking for measuring the changes, the labor requirements data assume that overhead and profit are a constant proportion of the dollar value figures, and that productivity per man-hour remains the same from month to month.

TABLE 10.—Number of workers required on and off site to put in place new construction, by type of construction, 1939-47<sup>1</sup>

Type of construction	Average monthly number of workers (in thousands)																
	1947					1946					1945	1944	1943	1942	1941	1940	1939
	Year	Fourth quarter	Third quarter	Second quarter	First quarter	Year	Fourth quarter	Third quarter	Second quarter	First quarter							
Total new construction <sup>2</sup> .....	1,865	2,135	2,100	1,710	1,515	1,690	1,930	2,080	1,625	1,115	825	795	1,360	2,360	2,230	1,810	1,720
Off site.....	230	265	240	205	195	215	245	270	200	145	95	90	150	270	265	210	200
On site.....	1,635	1,870	1,860	1,505	1,320	1,475	1,685	1,810	1,425	970	730	705	1,210	2,090	1,965	1,600	1,520
Private construction.....	1,290	1,495	1,455	1,165	1,055	1,195	1,305	1,460	1,195	815	435	320	330	590	1,160	1,040	945
Residential building (nonfarm).....	565	740	630	475	415	430	510	550	405	250	95	80	100	230	550	525	500
Nonresidential building (non-farm) <sup>3</sup> .....	370	375	360	350	395	480	495	540	500	380	145	55	40	120	315	245	195
Farm construction.....	75	60	135	80	30	60	50	110	65	20	40	40	70	80	105	95	90
Public utilities.....	280	320	330	260	215	225	250	260	225	165	155	145	120	160	190	175	160
Public construction.....	345	375	405	340	265	280	380	370	230	155	295	385	880	1,500	805	560	575
Residential building.....	30	20	20	25	55	55	105	80	30	10	10	25	105	85	85	45	15
Nonresidential building <sup>4</sup> .....	70	95	75	65	45	50	50	55	45	55	155	220	465	875	315	165	245
Conservation and development.....	40	45	50	35	35	30	40	35	30	25	20	20	40	55	60	60	60
Highways.....	125	135	170	130	70	90	120	130	75	35	45	40	60	100	160	185	180
All other public <sup>5</sup> .....	80	80	90	85	60	55	65	70	50	30	65	80	210	385	185	105	75

<sup>1</sup> Previously published as employment estimates. Available monthly from January 1939 to March 1947 and quarterly from the second quarter of 1947.

These estimates are designed to measure the number of workers required to put in place the dollar volume of new construction activity reported in tables 1 to 4. They cover the workers engaged at the site of new construction and also employees in yards, shops, and offices whose time is chargeable to new construction operations. Consequently the estimates include not only construction employees of establishments primarily engaged in new construction, but also self-employed persons, working proprietors, and employees of nonconstruction establishments who are engaged in new construction work. They do not cover persons engaged in repairs and maintenance.

In the case of non-Federal construction, these estimates are derived by converting, into man-months of work, dollars spent during each month of the quarter on construction projects under way. The conversion is made by using a factor representing the value of work put in place per man per hour

based on data from the 1939 Census of Construction and from periodic studies of a large number of individual projects of various types by the Bureau of Labor Statistics. The factor is adjusted for each quarter in accordance with changes in prices of building materials, average hourly earnings of construction workers, and average hours worked per week. For Federal construction, estimates are made directly from reports on employment collected from contractors and then checked against estimates based on Federal expenditures.

For an estimate of total workers employed by firms primarily engaged in new construction, additions, alterations, repairs, and maintenance work, see tables 5 to 7.

<sup>2</sup> Includes major additions and alterations.

<sup>3</sup> Includes nonresidential building by privately owned public utilities.

<sup>4</sup> Includes workers employed on facilities used in atomic energy projects.

<sup>5</sup> Includes airports, water supply and sewage disposal systems, electrification projects, and miscellaneous public-service enterprises.

Private nonfarm housing claimed over a third of all site labor required on new construction projects in 1947—a larger proportion than in any previous year from 1939, the earliest date for which figures are available. The boom in homebuilding during the latter half of the year raised the proportion of site labor on private housing projects to two-fifths of the total by the last quarter, or three-fourths of a million workers. Some of the new labor needed for housing in 1947 was taken from the force usually employed on nonresidential building, since construction labor for factories declined substantially from 1946 after reaching banner proportions.

The site labor needed to man privately financed public utility construction projects and construction by Federal, State, and local governments rose appreciably between 1946 and 1947 along with residential labor requirements. But the public utilities claimed much more labor than before the war, whereas public projects claimed far less. Among the nonbuilding labor, the demand for highway workers increased most in 1947, although requirements for this kind of work were well below what they were in 1939 and 1940.

Private projects took 80 percent of the construction labor in 1946 and 1947, in contrast with only 28 percent during the war peak in 1942, and somewhat more than 60 percent in the preparedness period 1939–41.

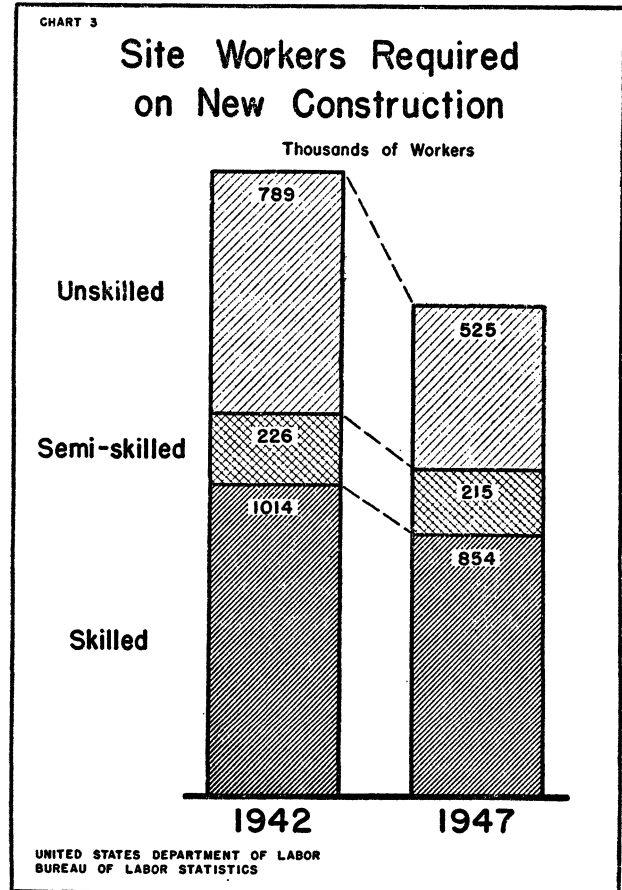
### Different Skills and Occupations

In recent years about half the site workers on new construction have been skilled. Carpenters are the most numerous among the skilled trades, comprising about a fourth of the labor at the site—370,000 men in 1947. More skilled labor is required for residential building than for other kinds of work, so that over two-thirds of the site crew on new housing is usually composed of skilled workers, and carpenters make up about half of these.

Except for plasterers and lathers, skilled construction workers were less in demand in 1947 than in 1942, when construction employment was at a record level. Also, although total employment in 1941 exceeded the level in 1947, more plasterers, lathers, and bricklayers were needed in the later year. The differences in the needs

arise from changes in the composition of the construction program and some variations in the materials used and in building methods.

The extraordinary part played by housing in 1947 chiefly explains the larger number of plasterers and lathers required in that year compared with 1942. The somewhat greater importance of homebuilding and the much smaller proportion of temporary construction in 1947 brought plasterers,



lathers, and bricklayers into more demand than in 1941. These influences are reflected in the figures on apprenticeship, which show that in 1947 not only were there more registered apprenticeship programs in the trowel trades than in any other group, but the number of these programs in the trowel trades had jumped by 60 percent during the year, compared with a 43-percent rise in the case of all trades combined.

TABLE 11.—Number of site workers required to put in place new construction, by skill and occupation, selected years <sup>1</sup>

Skill and occupation	Average monthly number of workers at the site (in thousands)											
	1947			1946			1942			1941		
	On all new construction	On new residential building		On all new construction	On new residential building		On all new construction	On new residential building		On all new construction	On new residential building	
		Labor requirements	Percent of total		Labor requirements	Percent of total		Labor requirements	Percent of total		Labor requirements	Percent of total
Total.....	1,635	595	36	1,475	485	33	2,090	315	15	1,965	635	32
Superintendents.....	28	11	39	24	8	33	32	2	6	27	4	15
Clerks.....	13	1	8	11	1	9	29	1	3	20	1	5
Skilled workers.....	854	410	48	777	336	43	1,014	194	19	985	391	40
Bricklayers.....	95	53	56	88	43	49	121	12	10	89	25	28
Carpenters.....	370	203	55	335	166	50	432	103	24	447	207	46
Construction machine operators.....	47	5	11	42	5	12	67	3	5	58	5	9
Electricians.....	33	13	39	31	10	32	47	9	19	45	18	40
Lathers.....	15	8	53	15	7	47	11	2	18	12	4	33
Painters and glaziers.....	72	45	63	67	37	55	76	26	34	89	52	58
Plasterers.....	42	24	57	38	19	50	32	9	28	39	18	46
Plumbers and steamfitters.....	54	26	48	49	21	43	71	16	23	70	32	46
All other.....	126	33	26	112	28	25	157	14	9	136	30	22
Semiskilled workers.....	215	70	33	184	56	30	226	14	6	205	28	14
Unskilled workers.....	525	103	20	479	84	18	789	104	13	728	211	29

<sup>1</sup> These estimates are designed to measure the number of workers required to put in place the dollar volume of new construction activity reported in tables 1 to 4. They cover the workers engaged at the site of new construction and also employees in yards, shops, and offices whose time is chargeable to new construction operations. Consequently the estimates include not only construction employees of establishments primarily engaged in new construction, but also self-employed persons, working proprietors, and employees of non-construction establishments who are engaged in new construction work. They do not cover persons engaged in repairs and maintenance.

In the case of all non-Federal construction, these estimates are derived by converting, into man-months of work, dollars spent during each month of the quarter on construction projects under way. The conversion is made by

using a factor representing the value of work put in place per man per hour based on data from the 1939 Census of Construction and from periodic studies of a large number of individual projects of various types by the Bureau of Labor Statistics. The factor is adjusted for each quarter in accordance with changes in prices of building materials, average hourly earnings of construction workers, and average hours worked per week. For Federal construction, estimates are made directly from reports on employment collected from contractors and then checked against estimates based on Federal expenditures.

For an estimate of total workers employed by firms primarily engaged in new construction, additions, alterations, repairs, and maintenance work, see tables 5 to 7.

## Housing

The year 1947 marked a 21-year peak in housing activity. The number of new permanent dwelling units started in 1947 (849,000) was greater than in any one year since 1926, when this record was equaled, and was surpassed only in 1923-25, when the country's greatest housing boom was at its height.<sup>9</sup> This 1947 record, while expected in view of an easier supply situation than the previous year and huge effective demand, was achieved under still serious postwar difficulties. Most important of these was high and continuously rising costs. If it had not been for cost uncertainties, 1947 homebuilding might have approached still nearer the all-time high of

937,000 units started in 1925. It exceeded the housing started in 1946 by 27 percent.

The rebound in housing activity after World War II was more rapid than after the First World War, and has been sustained. The number of housing units started did not quite triple between 1918 and 1919 (rising from 120,000 to 330,000), but more than tripled between 1945 and 1946 (see table 12). In 1920, sharply spiraling prices and the brief but steep recession which followed caused a 25-percent decline in homebuilding, but in 1947, the corresponding year after World War II, residential building was still expanding.

The estimates of new nonfarm housing are based on reports of building permits issued and on surveys of dwelling units started in some representative areas over the country that do not issue building permits.

<sup>9</sup> The dwelling units discussed here are new housekeeping units in permanent structures not located on farms. Excluded, therefore, are all units in temporary structures or trailers; farm houses; dwellings provided by converting existing structures to residential use or adding units to already existing houses; and accommodations in dormitories, hotels, and tourist cabins.

TABLE 12.—Number of new permanent nonfarm dwelling units started, by urban or rural location and by source of funds, 1920-47<sup>1</sup>

Period	Number of new permanent units									Total urban, as percent of all non-farm	Total private, as percent of all non-farm
	Total			Private			Public				
	All non-farm	Urban <sup>2</sup>	Rural non-farm <sup>2</sup>	Total	Urban <sup>2</sup>	Rural non-farm <sup>2</sup>	Total	Urban <sup>2</sup>	Rural non-farm <sup>2</sup>		
1920	247,000	196,000	51,000	247,000	196,000	51,000	0	0	0	79.4	100.0
1921	449,000	359,000	90,000	449,000	359,000	90,000	0	0	0	80.0	100.0
1922	716,000	574,000	142,000	716,000	574,000	142,000	0	0	0	80.2	100.0
1923	871,000	698,000	173,000	871,000	698,000	173,000	0	0	0	80.1	100.0
1924	893,000	716,000	177,000	893,000	716,000	177,000	0	0	0	80.2	100.0
1925	937,000	752,000	185,000	937,000	752,000	185,000	0	0	0	80.3	100.0
1926	849,000	681,000	168,000	849,000	681,000	168,000	0	0	0	80.2	100.0
1927	810,000	643,000	167,000	810,000	643,000	167,000	0	0	0	79.4	100.0
1928	753,000	594,000	159,000	753,000	594,000	159,000	0	0	0	78.9	100.0
1929	509,000	400,000	109,000	509,000	400,000	109,000	0	0	0	78.6	100.0
1930	330,000	236,000	94,000	330,000	236,000	94,000	0	0	0	71.5	100.0
1931	254,000	174,000	80,000	254,000	174,000	80,000	0	0	0	68.5	100.0
1932	134,000	64,000	70,000	134,000	64,000	70,000	0	0	0	47.8	100.0
1933	93,000	45,000	48,000	93,000	45,000	48,000	0	0	0	48.4	100.0
1934	126,000	49,000	77,000	126,000	49,000	77,000	0	0	0	38.9	100.0
1935	221,000	117,000	104,000	215,705	112,591	103,114	5,295	4,409	886	52.9	97.6
1936	319,000	211,000	108,000	304,225	197,648	106,577	14,775	13,352	1,423	66.1	95.4
1937	336,000	218,000	118,000	332,496	214,406	118,000	3,594	3,594	0	64.9	98.9
1938	406,000	262,000	144,000	399,294	255,294	144,000	6,706	6,706	0	64.5	98.3
1939	515,000	359,000	156,000	458,458	303,547	154,911	56,542	55,453	1,089	69.7	89.0
1940	602,600	396,600	206,000	529,571	333,154	196,417	73,029	63,446	9,583	65.8	87.9
1941	706,100	494,300	271,800	619,511	369,499	250,012	86,589	64,801	21,788	61.5	87.7
1942	356,000	227,400	128,600	301,191	184,914	116,277	54,809	42,486	12,323	63.9	84.6
1943	191,000	124,400	66,600	183,703	119,714	63,989	7,297	4,686	2,611	65.1	96.2
1944	141,800	96,200	45,600	138,692	93,216	45,476	3,108	2,984	124	67.8	97.8
1945	209,300	133,900	75,400	208,059	132,659	75,400	1,241	1,241	0	64.0	99.4
1946	670,500	403,700	266,800	662,473	395,673	266,800	8,027	8,027	0	60.2	98.8
January	37,500	22,400	15,100	36,892	21,792	15,100	608	608	0	59.7	98.4
February	42,400	25,000	17,400	42,400	25,000	17,400	0	0	0	59.0	100.0
March	62,000	38,000	24,000	62,000	38,000	24,000	0	0	0	61.3	100.0
April	67,000	41,000	26,000	67,000	41,000	26,000	0	0	0	61.2	100.0
May	67,100	41,000	26,100	67,100	41,000	26,100	0	0	0	61.1	100.0
June	64,100	39,000	25,100	62,762	37,662	25,100	1,338	1,338	0	60.8	97.9
July	62,600	37,300	25,300	61,290	35,990	25,300	1,310	1,310	0	59.6	97.9
August	65,400	39,500	25,900	61,915	36,015	25,900	3,485	3,485	0	60.4	94.7
September	57,600	33,600	24,000	57,600	33,600	24,000	0	0	0	58.3	100.0
October	57,800	34,600	23,200	56,514	31,314	23,200	1,286	1,286	0	59.9	97.8
November	47,700	28,600	19,100	47,700	28,600	19,100	0	0	0	60.0	100.0
December	39,300	23,700	15,600	39,300	23,700	15,600	0	0	0	60.3	100.0
1947	849,000	479,800	369,200	845,560	476,360	369,200	3,440	3,440	0	56.5	99.6
January	39,300	24,200	15,100	38,216	23,116	15,100	1,084	1,084	0	61.6	97.2
February	42,800	25,000	17,800	42,800	25,000	17,800	0	0	0	58.4	100.0
March	56,000	31,800	24,200	56,000	31,800	24,200	0	0	0	56.8	100.0
April	67,100	37,600	29,500	67,100	37,600	29,500	0	0	0	56.0	100.0
May	72,900	39,300	33,600	72,900	39,300	33,600	0	0	0	53.9	100.0
June	71,200	42,200	35,000	77,000	42,000	35,000	200	200	0	54.7	99.7
July	81,100	44,500	36,600	81,100	44,500	36,600	0	0	0	54.9	100.0
August	86,300	47,400	38,900	86,108	47,208	38,900	192	192	0	54.9	99.8
September	93,800	50,300	43,500	93,525	50,025	43,500	275	275	0	53.6	99.7
October	94,000	53,200	40,800	93,540	52,740	40,800	460	460	0	56.6	99.5
November	79,700	48,000	31,700	78,835	47,135	31,700	865	865	0	60.2	98.9
December	58,800	36,300	22,500	58,436	35,936	22,500	304	304	0	61.7	99.4

<sup>1</sup> Data for 1920-29 are from National Bureau of Economic Research; data for 1930-47 are from Bureau of Labor Statistics. Based on building permits issued and Federal construction contracts awarded, which, from 1946, have been supplemented by data from field surveys in non-permit-issuing places. Beginning in 1945 data from building permits have been adjusted for lapse permits and lag between permit issuance and the start of construction.

These influences were negligible prior to 1945.

Excludes units provided by the Federal Temporary Re-use Housing Program, and all other temporary units.

<sup>2</sup> Urban and rural nonfarm classifications for years 1920-29 are based on 1930 census; for years 1930-47, on 1940 census.

An estimate is prepared every month in three segments:<sup>10</sup> The first segment covers housing in

<sup>10</sup> The following estimating method relates only to privately financed units. Data on publicly financed units are enumerations rather than estimates. They are incorporated with the estimates of private dwellings to yield the final total of all nonfarm housing. The Bureau receives monthly reports from Federal, State, and local agencies giving the number and location of public units started and the contract values.

urban areas,<sup>11</sup> most of which are permit-issuing;

<sup>11</sup> The urban designation follows the Census definition and applies to all incorporated places of 2,500 population or more in 1940 and, by special rule, to a small number of unincorporated civil divisions essentially urban in character. Rural nonfarm units are defined as those in incorporated places with less than 2,500 population and all units in unincorporated areas that are not farm homes. Thus, urban housing is related to definite geographic areas, while rural nonfarm housing is defined according to the intended use of the dwelling units.

the second is for rural nonfarm housing for which building permit data are available; and the third, for rural nonfarm units started in areas not covered by building-permit systems, thus necessitating field survey.

### The Urban Estimate

The majority of urban places have building codes requiring a permit to build. The Bureau receives reports from all cities of 50,000 or more population (199) and from about 1,800 smaller cities, representing altogether around 80 percent of the total cities that issue permits but containing over 85 percent of the urban population. To the units recorded on building permits and reported to the Bureau from urban places, is added an estimate of units in building-permit-issuing urban places not reporting to the Bureau and of units in the few urban places not covered by permit systems. Since the resulting figure is based primarily on a record of intentions to build as recorded on permits, it is an estimate of the dwellings authorized each month, not of the number actually started. To derive a measure of the number of units started, the estimate of housing authorized in urban areas is adjusted to reflect the extent to which building permits are issued but not used, and the delay in starting construction usually experienced by builders after they obtain permits. This adjustment is based on the results of periodic checks with builders on a large and representative group of building projects.

### Estimating Rural Nonfarm Housing

The volume of rural nonfarm housing started in places that issue building permits is derived by inflating the number of reported units<sup>12</sup> to an estimated total and adjusting the results for unused permits and lag between permit issuance and the start of construction, applying the same methods as for the urban estimate.

To estimate housing activity in the non-permit-issuing segment of the rural nonfarm area, field agents of the Bureau canvass 96 representative counties and record the new homebuilding as it is

<sup>12</sup> The Bureau receives building permit reports from about 1,100 rural nonfarm incorporated places and about 250 unincorporated areas. This reporting segment is being rapidly expanded.

started. The sample results are weighted and expanded to provide a country-wide total for this part of the housing estimate. The 3 parts—urban, rural nonfarm permit-issuing, and rural nonfarm non-permit-issuing—are added together to give the complete figure on the number of new permanent dwelling units started nationally by private builders. Enumerations of the publicly financed units started each month are added to the private total to give the complete figure for the month.<sup>13</sup>

### Government Role in Housing Effort, 1946-47

The most serious reconversion problem after the war was not unemployment, as many economists had predicted, but the housing shortage. The deficit of homes induced by the low building rate during the depression and by building restrictions in the war years, was aggravated by such additional influences as the increased wartime marriage rate, rapid demobilization, the migration of war workers, and the high level of savings and of economic activity prevalent in the immediate post-war period. By the end of 1945, the housing shortage had assumed the nature of a major domestic crisis.

Wartime controls were not popular in many quarters, and there had been urgent requests for relaxation of controls on building as soon as possible, the argument being that peacetime demands could be met more quickly without restrictions.

Thus, in September 1945, the priorities system for securing building materials was abolished by the War Production Board and on October 15 wartime controls on construction were withdrawn through revocation of order L-41.<sup>14</sup> Building materials were thereby released to all purchasers alike and the sales price ceilings on housing were removed. Industrial construction had already been freed from control right after VJ-day.

At the time building restrictions were removed, the Office of War Mobilization and Reconversion announced a 6-point program to assist in expanding construction activity and production of con-

<sup>13</sup> See footnote 10, p. 17.

<sup>14</sup> Conservation Order L-41 was issued on April 9, 1942, placing all construction under rigid control. The order made it necessary for builders to obtain authorization from the War Production Board to begin residential construction costing \$500 or more; agricultural construction costing \$1,000 or more; or commercial and other construction costing \$5,000 or more during any continuous 12-month period.



struction materials, and to help prevent inflationary pricing of new housing. Nevertheless, many houses in the higher price brackets were started; industrial, commercial, and amusement enterprises rushed to get construction under way; and scarce materials began to disappear.

### Reconversion Housing Program

It soon became evident that new measures would be necessary on the part of the Government not only to encourage provision of moderate-cost housing, but also to make it available to returning veterans and their families. In December, the Civilian Production Administration, successor to the War Production Board, announced that under its Reconversion Housing Program, to take effect January 15, 1946, priorities for materials in short supply would be restored to aid home builders. The priorities (issued under Priorities Regulation 33) were awarded either to individual veterans building for themselves or to others who would build one or more dwellings to which veterans of World War II would be given preference in sale or rental. Each unit for which a priority for materials was secured was to sell for not more than \$10,000, including land and improvements, or rent for not more than \$80 per month. Power to award priorities assistance was delegated to the Federal Housing Administration.

In addition, the CPA directed surplus Government stocks of certain building materials to the housing program, and the Reconstruction Finance Corporation began a series of sales of excess stocks of building materials and construction equipment at various army and navy depots throughout the country.<sup>15</sup>

These measures to channel scarce building materials into housing assisted greatly the contra-seasonal rise in homebuilding that occurred in January and February 1946. Then, in March, there was an unprecedented monthly gain in housing—a 46-percent increase from February in the number of new permanent units started. Over and above seasonal influences and the increased effectiveness of the priorities assistance program, builders had rushed to get elaborate and expensive homes under way before newly announced restrictions were to go into effect. The ex-

pected regulation (Veterans' Housing Program Order 1) was issued on March 26. It limited residential building practically in entirety (except for units to cost \$400 or less) to housing for which priorities would be given under the program described above. In addition, controls on nonresidential building were instituted similar to the wartime restrictions of Conservation Order L-41.

Homebuilding continued to rise in April and May, but materials shortages, aggravated by competition for materials from the huge volume of large-scale nonresidential building that got under way before March 26, placed a damper on further expansion.

### Veterans' Emergency Housing Program

Meanwhile, early in the year and about the time the priorities assistance program went into effect, all housing functions were coordinated under an administrator who was instructed to search out and break bottlenecks, to make the machinery of housing production run as smoothly and as speedily as possible. On February 7, 1946, the administrator, or Housing Expediter, made a formal report to the President on a Veterans' Emergency Housing Program. The President approved the report on the following day and urged Congress to enact legislation recommended in the report.

Most of the Housing Expediter's recommendations were embodied in the Veterans' Emergency Housing Act of 1946, approved on May 22. This act, commonly called the Patman Act, established the Office of the Housing Expediter on a statutory basis. It reaffirmed, until December 31, 1947, the wartime authority previously granted to the Housing Expediter to exercise first claim on scarce building materials for construction of low and medium cost houses. Price ceilings were put on new homes, and veterans received preference in buying or renting housing. The measure also provided \$400,000,000 for subsidies to building materials makers to spur production of materials in short supply. It also increased by a billion dollars the Government's authority to insure home loans through private capital, protecting lenders against risks incurred by selling homes on small down payments.

Originally the Veterans' Emergency Housing Program was contemplated as a 2-year program. It called for 1.2 million homes to be started in

<sup>15</sup> These activities were undertaken under authority and rules of Direction 7 to Priorities Regulation 13.

1946, and another 1.5 million in 1947. According to the blueprint, the 1946 phase of the program was to provide 700,000 new conventional-type homes, 250,000 permanent prefabricated houses, and 250,000 temporary units. Envisaged for 1947 were 900,000 conventional houses and 600,000 permanent prefabricated houses. All of the houses called for in the program were to be permanent, with the exception of 250,000 units in 1946. These were to be divided into 50,000 trailers and 200,000 units to be secured from re-erecting dismantled war housing or converting war structures into housing.

By the end of 1946, slightly more than a million units of all types had been started. Of that number, two-thirds (670,500) were new permanent units. The remaining third consisted of converted units, temporary housing units, and housing trailers. Only a few (37,600) of the new permanent units were factory-built.

TABLE 13.—Number of new nonfarm dwelling units started, by source of funds and whether permanent or temporary, 1935-47<sup>1</sup>

Year	Number of new dwelling units				
	Total nonfarm	Private	Public		
			Total	Perma- nent	Tempo- rary
1935.....	221,000	215,705	5,295	5,295	0
1936.....	319,000	304,225	14,775	14,775	0
1937.....	336,000	332,406	3,594	3,594	0
1938.....	406,000	399,294	6,706	6,706	0
1939.....	515,000	458,458	56,542	56,542	0
1940.....	602,600	529,871	73,029	73,029	0
1941.....	715,200	619,460	95,740	80,589	* 9,151
1942.....	496,600	301,198	195,407	54,809	* 140,598
1943.....	350,100	183,660	166,440	7,297	* 159,143
1944.....	169,400	138,779	30,621	3,108	* 27,513
1945.....	225,700	208,118	17,582	1,241	* 16,341
1946.....	778,200	662,528	113,674	8,027	* 105,647
1947.....	853,500	845,615	7,885	3,440	* 4,445

<sup>1</sup> Based on building permits issued and Federal construction contracts awarded, which, from 1946, have been supplemented by data from field surveys in non-permit-issuing places.

Beginning in 1945, data from building permits have been adjusted for lapsed permits and lag between permit issuance and the start of construction. These influences were negligible prior to 1945.

\* Principally defense and war housing authorized under the Lanham Act.

† Covers those conventional-type units in the Federal Temporary Re-Use Housing Program provided by dismantling temporary war structures and re-erecting them at new sites. Excludes conversions, dormitory accommodations, trailers, and military barracks.

‡ Covers Federal temporary units on military reservations and at the site of reclamation projects; also, units built by various local governments.

The hoped-for expansion in industrialized housing had still not materialized by the end of 1947, and indications from available though incomplete records are that 1947 production of factory-built units about equaled the 1946 total. While 1947 housing under the VEHP was to be entirely per-

manent, some temporary units were provided in that year in addition to the 849,000 new permanent units started (see p. 16 and table 12). Since the housing functions of the program were brought to an end June 30, 1947, it is not possible to compare achievements during the year with the original blueprint.

An especially important part in the Veterans' Emergency Housing Program was played by the temporary re-use program,<sup>16</sup> because it provided stopgap housing rapidly in areas of especially critical need. It mobilized the surplus housing resources under control of the Federal Government (such as army barracks, Quonset huts, temporary dwellings erected for servicemen's families, and military structures potentially convertible into housing) for meeting veterans' housing needs on a temporary basis. Just over 200,000 re-use units were started and almost 187,000 completed from January 1946 through June 1947, when the program was almost at its close. About two-thirds of the accommodations were conventional-type dwellings. The remainder were converted units, dormitories, and trailers. Practically all the units were in use into 1948. Though by no means to be considered a part of the country's permanent inventory of housing, and subject to early retirement, these dwellings have served a real need at a critical time.

During the life of the VEHP several modifications were made in existing regulations to stimulate housing progress, and some new regulations were introduced. For example, a number of steps were taken, in addition to measures already mentioned, to ease the materials situation. Some of them were as follows. The Civilian Production Administration granted priority ratings (CC, under Priorities Regulation 28) to producers of critical products for purchase of equipment and operating supplies needed to expand output. From time to time the number of items which dealers and manufacturers were required to set aside for priority holders was increased. Federal building projects that might interfere with the housing program were subjected to the same tests of immediate necessity as private building. The Office of Price Administration granted over 100 price increases on building materials to stimulate production. The Wage Stabilization Board approved many

<sup>16</sup> The program was authorized under Title V of the Lanham Act in June 1945 and was begun late in that year.

TABLE 14.—Total number of living accommodations provided during the Veterans' Emergency Housing Program, 1946-47<sup>1</sup>

Period	Number of accommodations											
	Started						Completed					
	All types	New permanent dwelling units <sup>2</sup>			Federal temporary re-use units <sup>3</sup>	Converted dwelling units, dormitories, and trailers <sup>4</sup>	All types	New permanent dwelling units <sup>2</sup>			Federal temporary re-use units <sup>3</sup>	Converted dwelling units, dormitories, and trailers <sup>4</sup>
		Total	Private	Public				Total	Private	Public		
1946	1,001,800	670,500	662,500	8,000	191,000	140,300	642,300	437,800	437,800	( <sup>5</sup> )	101,900	102,600
January	51,000	37,500	36,900	600	6,800	6,700	22,100	15,900	15,900	0	900	5,300
February	55,500	42,400	42,400	0	5,800	7,300	25,000	17,300	17,300	0	2,700	5,000
March	88,200	62,000	62,000	0	16,300	9,900	27,300	18,700	18,700	0	2,800	5,800
April	98,600	67,000	67,000	0	18,500	13,100	30,200	21,000	21,000	0	3,400	5,800
May	105,700	67,100	67,100	0	25,500	13,100	34,700	25,100	25,100	0	3,200	6,400
June	94,300	64,100	62,800	1,300	20,300	9,900	42,300	30,600	30,600	0	4,200	7,500
July	106,500	62,600	61,300	1,300	30,000	13,900	50,000	36,700	36,700	0	6,300	7,000
August	108,500	65,400	61,900	3,500	29,200	13,900	60,600	43,400	43,400	0	8,900	8,300
September	102,800	57,600	57,600	0	27,800	17,400	81,100	49,700	49,700	0	19,100	12,300
October	78,600	57,800	56,500	1,300	7,400	13,400	86,300	55,500	55,500	0	17,600	13,200
November	61,800	47,700	47,700	0	1,500	12,600	87,800	61,200	61,200	0	14,200	12,400
December	50,300	39,300	39,300	0	1,900	9,100	94,900	62,700	62,700	( <sup>5</sup> )	18,600	13,600
1947	( <sup>5</sup> )	849,000	845,600	3,400	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	831,700	829,900	1,800	( <sup>5</sup> )	( <sup>5</sup> )
January	52,000	39,300	38,200	1,100	4,400	8,300	97,400	62,600	62,600	0	23,200	11,600
February	51,700	42,800	42,800	0	2,000	6,900	91,700	60,300	60,300	0	19,900	11,500
March	65,100	56,000	56,000	0	1,600	7,500	87,200	57,600	57,600	0	18,200	11,400
April	78,600	67,100	67,100	0	1,700	9,800	82,300	59,200	59,100	100	11,400	11,700
May	81,600	72,900	72,900	0	300	8,400	78,200	59,400	59,400	0	8,000	10,800
June		77,200	77,000	200	400			62,300	62,100	200	4,100	
July		81,100	81,100	0				64,800	64,500	300		
August		86,300	86,100	200				69,600	69,500	100		
September		93,800	93,500	300				76,700	76,500	200		
October		94,000	93,500	500				82,700	82,600	100		
November		79,700	78,900	800				86,500	86,300	200		
December		58,800	58,500	300				90,000	89,400	600		

<sup>1</sup> Data are from the Bureau of Labor Statistics, except that estimates for conversions and dormitory units are from the Office of the Housing Expediter, and estimates for trailers are from the Bureau of the Census.

<sup>2</sup> Covers both conventional and prefabricated units.

<sup>3</sup> Covers conventional-type units provided by dismantling temporary war structures and re-erecting them at new sites, conversions, dormitory accommodations, and trailers. The figures on dormitory accommodations are pre-

sented in terms of equivalent living accommodations, that is, 2 dormitory accommodations are counted as 1 dwelling unit.

<sup>4</sup> Outside the Federal Temporary Re-Use Housing Program.

<sup>5</sup> Less than 50 units.

<sup>6</sup> Information for all of 1947 not shown, since housing functions of VEHP were ended June 30, 1947.

necessary wage adjustments where low pay had caused manpower shortages affecting production of materials. Some 60 items of housing materials were put under tight control. Housing program funds were made available to the Forest Service for access-road construction to formerly inaccessible timber. In October 1946, free importation of timber, lumber, and lumber products was provided by Presidential proclamation.

This comprehensive campaign became increasingly more effective. By the end of 1946, production of most materials ranged from 50 to 100 percent higher than during the early months of the year. The great improvement in materials production led to relaxation of housing controls, which, according to Presidential announcement, was in line with the Government's broad policy of lifting all wartime controls as rapidly as possible.

Thus, on December 24, new homebuilding was opened to anyone, veteran or nonveteran, who wished to build a year-round house of certain

restricted floor area (1,500 square feet) for his own occupancy. The existing priority system was replaced by a simple permit system. Sales-price ceilings on homes built under permit were discontinued, but rental price ceilings were retained though modified (permitting an \$80 monthly average rental for entire projects rather than \$80 per unit). The reserve set-asides on building materials were dropped and priority assistance to producers was considerably narrowed. Controls had already been removed, in the preceding month, from building materials prices and construction workers' wages, when wage controls and practically all price controls in the economy generally were abolished. In January 1947 the rate of approvals for nonresidential construction, still under control, was increased and more exemptions were allowed.

But homebuilding did not attain the levels early in 1947 that had been anticipated. Whereas supplies were easier to get, costs were soaring and

builders were afraid the price structure would crack.

More housing restrictions were removed. Beginning June 1, Federal permits were no longer required as a preliminary to home construction, a one-bathroom-per-house restriction was dropped, and the limitation of 1,500 square feet on floor area for homes was raised to 2,500 square feet.

On June 30, the Housing and Rent Act of 1947 virtually abolished the Veterans' Emergency Housing Program. Almost all the important functions of the Housing Expediter, with the exception of rent control, were removed, and permit requirements for industrial and commercial construction were discontinued, except in the case of amusement and recreation projects. A few activities remained to be carried on under the act during the latter half of 1947, having to do with administration of previously committed premium payment plans to building materials producers, market guarantees to housing manufacturers, restriction on amusement and recreation building, and enforcing compliance of regulations for housing built under the VEHP in 1946 and early 1947.

The exaggerated seasonal upswing in housing activity in late summer and fall received impetus from the growing certainty that prices would not collapse very soon and was supported by a good supply situation, a 60-million job economy, and the continuing critical housing shortage.

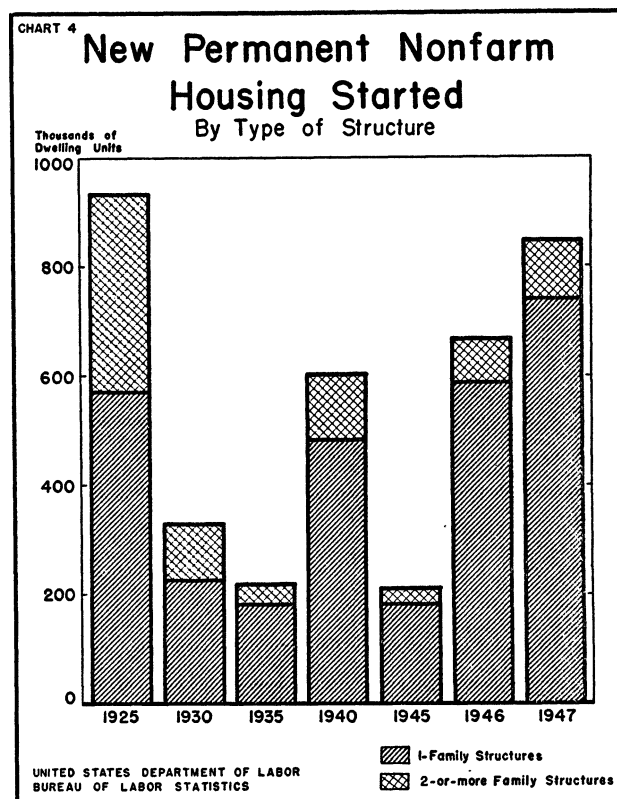
### Rental Housing

Surveys made by the Bureau of Labor Statistics and the Bureau of the Census in 1946 revealed that half the veterans in the housing market wanted to rent rather than buy housing. Yet in 1946 and 1947 only about 12 percent of all units started were of the rental type.<sup>17</sup>

In spite of the widespread demand for rental accommodations, the long term nature of investment in apartment construction was not as attractive as the quick turn-over to be made from single-family homes built for sale. To encourage private activity in the rental housing field various forms of Government assistance were made available. These included provision of additional sums

<sup>17</sup> Although separate estimates of housing built for rent and for sale are not available, a rough approximation of the magnitude of the rental segment may be obtained from the number of units in two-or-more-family structures, most of which are built for rent.

for mortgage insurance of home loans under Title VI of the National Housing Act, with liberalized mortgage loan regulations.



One of the most effective encouragements to rental housing was the revision early in 1947 of Section 608 to provide for reduced monthly carrying charges and a 5-year extension in mortgage maturities in financing multiple-unit housing projects. The Federal Housing Administration was especially active in 1947 in acquainting builders and investors with mortgage insurance provisions and encouraging them to start rental projects. These measures, in addition to some relaxation in rent controls at the end of June, resulted in the steady upward trend in construction of rental-type units that began in the middle of 1947. By the last quarter of the year the proportion of such units to all dwellings started had increased to 15 percent. The 15 percent of rental units at the end of 1947, however, is in contrast with the average of 39 percent per year started in the decade 1921-30, and 21 percent in the thirties.

TABLE 15.—Number and percentage distribution of new permanent nonfarm dwelling units started in 1-family, 2-family, and multifamily structures, 1920-47<sup>1</sup>

Period	Number of new permanent units in—				Percentage distribution of new permanent units in—		
	All structures	1-family structures	2-family structures <sup>2</sup>	Multifamily structures <sup>3</sup>	1-family structures	2-family structures <sup>2</sup>	Multifamily structures <sup>3</sup>
1920.....	247,000	202,000	24,000	21,000	81.8	9.7	8.5
1921.....	449,000	316,000	70,000	63,000	70.4	15.6	14.0
1922.....	716,000	437,000	146,000	133,000	61.0	20.4	18.6
1923.....	871,000	513,000	175,000	183,000	58.9	20.1	21.0
1924.....	893,000	534,000	173,000	186,000	59.8	19.4	20.8
1925.....	937,000	572,000	187,000	208,000	61.0	16.8	22.2
1926.....	849,000	491,000	117,000	241,000	57.8	13.8	28.4
1927.....	810,000	454,000	99,000	257,000	56.1	12.2	31.7
1928.....	753,000	436,000	78,000	239,000	57.9	10.4	31.7
1929.....	509,000	316,000	51,000	142,000	62.1	10.0	27.9
1930.....	330,000	227,000	29,000	74,000	68.8	8.8	22.4
1931.....	254,000	187,000	22,000	45,000	73.6	8.7	17.7
1932.....	134,000	118,000	7,000	9,000	88.1	5.2	6.7
1933.....	93,000	76,000	5,000	12,000	81.7	5.4	12.9
1934.....	126,000	109,000	5,000	12,000	86.5	4.0	9.5
1935.....	221,000	183,000	8,000	30,000	82.8	3.6	13.6
1936.....	319,000	244,000	14,000	61,000	76.5	4.4	19.1
1937.....	336,000	267,000	16,000	53,000	79.4	4.8	15.8
1938.....	406,000	317,000	18,000	71,000	78.1	4.4	17.5
1939.....	515,000	399,000	29,000	87,000	77.5	5.6	16.9
1940.....	602,600	485,700	37,300	79,600	80.6	6.2	13.2
1941.....	706,100	603,500	34,300	68,300	85.5	4.8	9.7
1942.....	356,000	292,800	20,100	43,100	82.3	5.6	12.1
1943.....	191,000	143,600	17,800	29,600	75.2	9.3	15.5
1944.....	141,800	117,700	10,600	13,500	83.0	7.5	9.5
1945.....	209,300	184,600	8,800	15,900	88.2	4.2	7.6
1946: Total.....	670,500	590,000	24,300	56,200	88.0	3.6	8.4
January.....	37,500	32,400	1,300	3,800	86.4	3.5	10.1
February.....	42,400	37,500	1,600	3,300	88.4	3.8	7.8
March.....	62,000	54,200	2,400	5,400	87.4	3.9	8.7
April.....	67,000	59,900	2,400	4,700	89.4	3.6	7.0
May.....	67,100	58,800	3,000	5,300	87.6	4.5	7.9
June.....	64,100	55,300	2,500	6,300	86.3	3.9	9.8
July.....	62,600	55,600	2,200	4,800	88.8	3.5	7.7
August.....	65,400	55,100	2,000	8,300	84.2	3.1	12.7
September.....	57,600	51,900	2,000	3,700	90.1	3.5	6.4
October.....	57,800	50,700	1,900	5,200	87.7	3.3	9.0
November.....	47,700	43,600	1,700	2,400	91.4	3.6	5.0
December.....	39,300	35,000	1,300	3,000	89.1	3.3	7.6
1947: Total.....	849,000	740,200	33,900	74,900	87.2	4.0	8.8
January.....	39,300	35,000	1,500	2,800	89.1	3.8	7.1
February.....	42,800	39,100	1,600	2,100	91.4	3.7	4.9
March.....	56,000	49,900	2,200	3,900	89.1	3.9	7.0
April.....	67,100	60,500	2,800	3,800	90.2	4.2	5.6
May.....	72,900	65,800	3,100	4,000	90.3	4.2	5.5
June.....	77,200	67,300	3,400	6,500	87.2	4.4	8.4
July.....	81,100	70,500	3,200	7,400	86.9	4.0	9.1
August.....	86,300	74,100	3,300	8,900	85.9	3.8	10.3
September.....	93,800	80,700	3,300	9,800	86.0	3.5	10.5
October.....	94,000	80,100	3,300	10,600	85.2	3.5	11.3
November.....	79,700	67,300	3,400	9,000	84.4	4.3	11.3
December.....	58,800	49,900	2,800	6,100	84.9	4.7	10.4

<sup>1</sup> Data for 1920-29 are from National Bureau of Economic Research; data for 1930-47 are from Bureau of Labor Statistics. Based on building permits issued and Federal construction contracts awarded, which, from 1946, have been supplemented by data from field surveys in non-permit-issuing places. Beginning in 1945 data from building permits have been adjusted for lapsed permits and lag between permit issuance and the start of construction.

These influences were negligible prior to 1945.

Excludes units provided by the Federal Temporary Re-Use Housing Program, and all other temporary units.

<sup>2</sup> Includes units in 1- and 2-family structures with stores.

<sup>3</sup> Includes units in multifamily structures with stores.

Rental housing is largely urban and it is most common in the largest cities. Only a very small proportion of the dwelling units usually built for rent (in 2-family and multifamily structures) were scheduled for construction outside cities in 1946-47, in spite of some increase in large-scale multiple-unit projects in suburban areas. In the biggest cities, those of 500,000 population or more, nearly two-fifths of all the privately financed units

authorized<sup>18</sup> for start were of the rental type in 1946 and 1947. With each successively smaller city-size group (see table 16), the proportion of rental units to the total declined. Less than 10 percent of the dwellings authorized in cities of 2,500 to 5,000 population were in 2-family or multifamily structures.

<sup>18</sup> Dwelling units for which building permits were issued.

TABLE 16.—New urban dwelling units authorized, by type of structure and by city-size class, 1946-47<sup>1</sup>

City-size class	Total								Private							
	Number of new dwelling units		Valuation (in thousands) <sup>2</sup>		Percentage distribution				Number of new dwelling units		Valuation (in thousands) <sup>2</sup>		Percentage distribution			
					Number		Valuation						Number		Valuation	
	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946
<b>All types of structures</b>																
All urban places.....	506,453	528,505	\$2,916,103	\$2,448,277	100.0	100.0	100.0	100.0	501,353	430,195	\$2,880,926	\$2,114,833	100.0	100.0	100.0	100.0
500,000 and over.....	78,991	105,121	549,574	551,819	15.6	19.9	18.9	22.5	75,340	75,072	522,890	421,992	15.0	17.5	18.2	20.0
100,000 to 500,000.....	104,030	104,285	561,196	466,433	20.5	19.7	19.2	19.1	103,064	82,684	556,041	404,326	20.5	19.2	19.3	19.1
50,000 to 100,000.....	48,760	47,799	279,558	215,281	9.6	9.0	9.6	8.8	48,529	33,366	278,203	186,339	9.7	8.9	9.7	8.8
25,000 to 50,000.....	54,506	55,746	307,553	259,212	10.8	10.6	10.5	10.6	54,446	46,826	307,098	230,631	10.9	10.9	10.7	10.9
10,000 to 25,000.....	90,507	93,379	506,722	417,476	17.9	17.7	17.4	17.1	90,321	77,884	505,267	371,823	18.0	18.1	17.5	17.6
5,000 to 10,000.....	74,581	70,996	418,703	321,653	14.7	13.4	14.4	13.1	74,581	62,946	418,703	297,214	14.9	14.6	14.5	14.0
2,500 to 5,000.....	55,078	51,179	292,796	216,403	10.9	9.7	10.0	8.8	55,072	46,417	292,722	202,508	11.0	10.8	10.1	9.6
<b>1-family structures</b>																
All urban places.....	394,788	448,434	2,369,476	2,106,421	100.0	100.0	100.0	100.0	393,550	358,151	2,361,509	1,830,260	100.0	100.0	100.0	100.0
500,000 and over.....	47,587	67,567	373,554	369,610	12.1	15.0	15.8	17.6	47,283	45,545	371,102	297,066	12.0	12.7	15.7	16.2
100,000 to 500,000.....	73,849	90,342	427,712	414,965	18.7	20.1	18.1	19.7	73,079	68,741	423,586	352,888	18.6	19.2	17.9	19.3
50,000 to 100,000.....	36,711	42,007	221,410	193,718	9.3	9.4	9.3	9.2	36,680	32,574	221,255	164,776	9.3	9.1	9.4	9.0
25,000 to 50,000.....	43,797	49,183	257,290	232,391	11.1	11.0	10.9	11.0	43,797	40,263	257,260	203,810	11.1	11.2	10.9	11.1
10,000 to 25,000.....	76,691	86,082	440,959	388,020	19.4	19.2	18.6	18.4	76,564	70,587	439,799	342,367	19.5	19.7	18.6	18.7
5,000 to 10,000.....	65,619	64,856	375,339	299,159	16.6	14.5	15.8	14.2	65,619	56,806	375,339	274,720	16.7	15.9	15.9	15.0
2,500 to 5,000.....	50,534	48,397	273,242	208,528	12.8	10.8	11.5	9.9	50,528	43,635	273,169	194,633	12.8	12.2	11.6	10.7
<b>2-family structures<sup>3</sup></b>																
All urban places.....	34,233	24,326	156,618	103,042	100.0	100.0	100.0	100.0	34,159	24,326	156,408	103,042	100.0	100.0	100.0	100.0
500,000 and over.....	8,104	8,746	45,194	43,212	23.6	35.9	28.9	42.0	8,048	8,746	45,074	43,212	23.5	36.0	28.8	42.0
100,000 to 500,000.....	10,672	4,878	44,234	19,274	31.2	20.0	28.2	18.7	10,654	4,878	44,144	19,274	31.2	20.0	28.3	18.7
50,000 to 100,000.....	2,586	1,718	11,483	6,900	7.6	7.1	7.3	6.7	2,586	1,718	11,483	6,900	7.6	7.1	7.3	6.7
25,000 to 50,000.....	2,811	2,050	12,816	7,904	8.2	8.4	8.2	7.7	2,811	2,050	12,816	7,904	8.2	8.4	8.2	7.7
10,000 to 25,000.....	4,368	2,890	19,245	10,758	12.7	11.9	12.3	10.4	4,368	2,890	19,245	10,758	12.8	11.9	12.3	10.4
5,000 to 10,000.....	3,273	2,742	14,288	11,149	9.6	11.3	9.1	10.8	3,273	2,742	14,288	11,149	9.6	11.3	9.1	10.8
2,500 to 5,000.....	2,419	1,302	9,358	3,845	7.1	5.4	6.0	3.7	2,419	1,302	9,358	3,845	7.1	5.3	6.0	3.7
<b>Multifamily structures<sup>4</sup></b>																
All urban places.....	77,432	55,745	390,008	238,814	100.0	100.0	100.0	100.0	73,644	47,718	363,009	181,531	100.0	100.0	100.0	100.0
500,000 and over.....	23,300	28,898	130,825	138,997	30.1	51.6	33.5	58.2	20,009	20,781	106,715	81,714	27.2	43.6	29.4	46.0
100,000 to 500,000.....	19,509	9,065	89,250	32,164	25.2	16.3	22.9	13.5	19,331	9,065	88,311	32,164	26.2	19.0	24.4	17.7
50,000 to 100,000.....	9,463	4,074	46,666	14,663	12.2	7.3	12.0	6.1	9,263	4,074	45,466	14,663	12.6	8.5	12.5	8.1
25,000 to 50,000.....	7,898	4,513	37,477	18,917	10.2	8.1	9.6	7.9	7,338	4,513	37,022	18,917	10.6	9.5	10.2	10.4
10,000 to 25,000.....	9,448	4,407	46,518	18,898	12.2	7.9	11.9	7.8	9,389	4,407	46,223	18,898	12.8	9.2	12.7	10.3
5,000 to 10,000.....	5,689	3,398	29,077	11,345	7.3	6.1	7.5	4.8	5,689	3,398	29,077	11,345	7.7	7.1	8.0	6.3
2,500 to 5,000.....	2,125	1,480	10,195	4,030	2.8	2.7	2.6	1.7	2,125	1,480	10,195	4,030	2.9	3.1	2.8	2.2

<sup>1</sup> Dwelling units for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of new homebuilding undertaken in some small urban places that do not issue building permits. These data on city dwelling units, unlike the data on nonfarm housing in tables 12-15, 17, and 18, cover homebuilding only in urban places, excluding the areas surrounding the city proper. In addition, the urban dwelling unit information does not represent the volume of new homebuilding actually started during the month, as in the case of nonfarm housing, since the building

permit data have not been adjusted for lapsed permits nor for lag between permit issuance and the start of construction. Urban classification and city size are based on the 1940 census.

<sup>2</sup> Components do not always equal totals exactly because of rounding.

<sup>3</sup> Includes units in 1- and 2-family structures with stores.

<sup>4</sup> Includes units in multifamily structures with stores.

## Housing Completions

Estimates of dwelling units completed were not made prior to 1946. Preparation of such estimates would have been impracticable, because the need for completions data was not sufficiently urgent to warrant the extensive field work necessary to derive them. Before the war, when it took an average of only 3½ to 4 months to build a house, estimates of new units started offered a fairly adequate annual measure also of units completed.

In 1946, however, the rapidly rising number of starts outstripped the supply of materials, and the completions rate lagged farther and farther behind. An imperative need developed for data on completions progress.

To supply this need the Bureau in 1946 included in its field program a series of studies to determine the length of the construction period for homebuilding in a group of representative areas throughout the country. Information from these areas was used to derive national monthly estimates of the completions rate.

There was a steady rise in dwelling unit completions in 1946 as materials and labor supply gradually improved, causing a moderate decline in the construction period. By the end of the year, it took an average of about 6 months to finish a house. This was well above the prewar rate, but much better than the 8 or 9 months characteristic of operations earlier in the year. The number of dwellings completed in December 1946 (62,700) was nearly three times the number completed in January (15,900).

Supply conditions were so greatly improved by the beginning of 1947 that the completions rate depended largely on the rapidity with which new dwellings had been started. The units started early in 1947 and the huge backlog of over 370,000 unfinished units begun in 1946 caused the completions rate during the first half of 1947 to be maintained at around 60,000 per month. As the housing boom expected earlier in the year finally developed in the summer and fall, and materials production reached unprecedented levels, completions soared, reaching 90,000 in December. Construction time was reduced to about 4½ months by the end of the year, and in 1947 831,700 new permanent dwelling units were completed, nearly twice the 437,800 made ready for occupancy in 1946.

Even with completions at a very high rate, however, the near-record level of housing started during the last half of the year was great enough to leave a total of nearly 390,000 dwelling units still under construction at the end of 1947, almost 20,000 more than at the end of 1946.

TABLE 17.—Number of new permanent nonfarm dwelling units started, completed, and under construction, monthly, 1946-47<sup>1</sup>

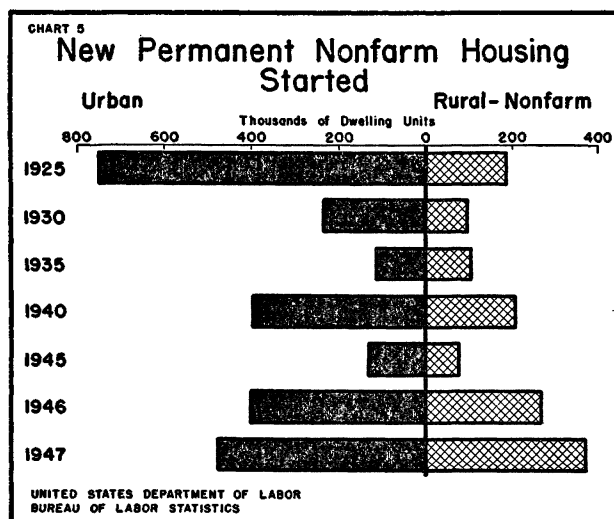
Period	New dwelling units		
	Started	Completed	Under construction
1946, total.....	670,500	437,800	-----
January.....	37,500	15,900	159,100
February.....	42,400	17,300	184,200
March.....	62,000	18,700	227,500
April.....	67,000	21,000	273,500
May.....	67,100	25,100	315,500
June.....	64,100	30,600	349,000
July.....	62,600	36,700	374,900
August.....	65,400	43,400	396,900
September.....	57,600	49,700	404,800
October.....	57,800	55,500	407,100
November.....	47,700	61,200	393,600
December.....	39,300	62,700	370,200
1947, total.....	849,000	831,700	-----
January.....	39,300	62,600	346,900
February.....	42,800	60,300	329,400
March.....	56,000	57,600	327,800
April.....	67,100	59,200	335,700
May.....	72,900	59,400	349,200
June.....	77,200	62,300	364,100
July.....	81,100	64,800	380,400
August.....	86,300	69,600	397,100
September.....	93,800	76,700	414,200
October.....	94,000	82,700	425,500
November.....	79,700	86,600	418,700
December.....	68,800	90,000	387,500

<sup>1</sup> Based on building permits issued, on field surveys in non-permit-issuing places, and on reports of Federal construction contracts awarded. Data from building permits have been adjusted for lapsed permits and lag between permit issuance and the start of construction. Excludes units provided by the Federal Temporary Re-Use Housing Program and all other temporary units.

## Shifts in Location of New Housing

The tendency for most housing to be located within city limits has decreased markedly since the 1920's, when 80 percent of all the new dwellings started in nonfarm areas were urban. While most nonfarm homes were still built in cities in 1947, the proportion had declined to 57 percent. It will be recalled, of course, that during the depression years 1932-35 less than half the homes started were urban, but this condition resulted from the particularly drastic economic collapse in the industrial areas at that time, and not from a boom in rural nonfarm housing.

The trend toward more building outside of urban areas was conspicuous between 1946 and 1947, when the number of new permanent dwellings started rose proportionately twice as much in the rural nonfarm as in the urban areas. This movement has a number of influences, many having to do with cutting costs. Suburban and rural land is cheaper than city lots, taxes are usually lower, and often building codes are less strict or lacking entirely. Also, building in large projects, more pronounced recently than in most previous periods, has necessitated using larger tracts of land than would ordinarily be available within city limits.



The corollary of more housing in isolated rural locations, however, has by no means resulted. The tendency instead has been for more and more dwellings to be built in metropolitan areas, that is, if not within city limits, at least within commuting distance. This movement has been growing for several decades. It was clear during the postwar housing program when the proportion of all nonfarm dwellings started in metropolitan areas rose from around 61 percent in 1946 to nearly 68 percent by the end of 1947. Even counting only the nonfarm dwellings built in rural areas, over half were in metropolitan districts in 1946 and 1947, and in the last quarter of 1947 the proportion was well above 60 percent.

In the latter part of 1947, there was a significant trend back toward the cities, when the proportion of nonfarm homes started outside of urban areas declined from the high point of 46 percent in September to 38 percent in December. The reason for this shift was the spurt during the latter part of the year in construction of apartment dwellings for rent. Most apartment structures are built in cities, since they require less land per unit than other housing; and the high land, tax, and construction costs are usually offset by proportionately greater revenue and advantages of convenient location.

TABLE 18.—Percent of new permanent nonfarm dwelling units started inside and outside of metropolitan areas, 1946-47<sup>1</sup>

Period	Percent of dwelling units started	
	Inside metropolitan areas	Outside metropolitan areas
1946: First quarter.....	64.0	36.0
Second quarter.....	59.2	40.8
Third quarter.....	60.8	39.2
Fourth quarter.....	62.9	37.1
1947: First quarter.....	63.5	36.5
Second quarter.....	65.7	34.3
Third quarter.....	67.7	32.3
Fourth Quarter.....	67.8	32.2

<sup>1</sup> Based on building permits issued, on field surveys in non-permit-issuing places, and on reports of Federal construction contracts awarded. Data from building permits have been adjusted for lapsed permits and lag between permit issuance and the start of construction. Excludes units provided by the Federal Temporary Re-Use Housing Program and all other temporary units.

### Housing in Local Areas

The only statistics available on housing volume after the war covered either broad national and regional trends, or homebuilding activity within cities. It is clear from the preceding discussion that such figures would be inadequate for gaging the effectiveness of the emergency housing program after the war, since the housing need was felt locally and city statistics could measure only incompletely the local housing provided. For this reason among others,<sup>19</sup> the Bureau of Labor Statistics undertook a special series of surveys to measure the amount of privately financed housing started in a representative group of industrial areas and urban- and rural-type counties

<sup>19</sup> See discussion of method for deriving national estimates of housing activity, p. 13, for other uses to which the area data on housing were directed.



TABLE 19.—New urban dwelling units authorized, by type of structure and by geographic division, 1946-47 <sup>1</sup>

Region	Total								Private							
	Number of new dwelling units		Valuation (in thousands) <sup>2</sup>		Percentage distribution				Number of new dwelling units		Valuation (in thousands) <sup>3</sup>		Percentage distribution			
					Number		Valuation						Number		Valuation	
	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946
All types of structures																
All urban places.....	506,453	523,505	\$2,916,103	\$2,448,277	100.0	100.0	100.0	100.0	501,353	430,195	\$2,880,926	\$2,114,833	100.0	100.0	100.0	100.0
New England.....	23,871	22,601	152,132	111,027	4.7	4.3	5.2	4.5	23,871	16,485	152,132	91,580	4.8	3.8	5.3	4.3
Middle Atlantic.....	67,822	82,918	440,440	454,979	13.4	15.7	15.4	18.6	63,806	56,870	420,012	318,464	12.7	13.2	14.6	15.1
East North Central.....	92,001	95,431	634,573	509,302	18.2	18.0	21.7	20.8	91,541	77,697	633,092	453,727	18.3	18.1	22.0	21.5
West North Central.....	34,442	43,196	188,872	187,360	6.8	8.2	6.5	7.6	34,414	32,808	188,627	156,543	6.9	7.6	6.5	7.4
South Atlantic.....	73,959	64,267	390,364	275,697	14.6	12.2	13.4	11.3	73,843	57,037	389,277	257,753	14.7	13.4	13.5	12.2
East South Central.....	27,699	26,710	103,702	82,024	5.5	5.1	3.6	3.3	27,683	22,114	103,573	70,330	5.5	5.2	3.6	3.3
West South Central.....	71,512	68,279	294,358	226,610	14.1	12.9	10.1	9.3	71,300	58,568	293,496	203,686	14.2	13.6	10.2	9.6
Mountain.....	18,210	25,039	86,731	93,256	3.6	4.7	3.0	3.8	18,122	18,639	86,097	77,060	3.6	4.3	3.0	3.6
Pacific.....	96,937	100,064	615,922	508,022	19.1	18.9	21.1	20.8	96,773	80,368	614,620	485,690	19.3	20.8	21.3	23.0
1-family structures																
All urban places.....	394,788	443,434	2,369,476	2,106,421	100.0	100.0	100.0	100.0	393,550	358,151	2,361,509	1,830,280	100.0	100.0	100.0	100.0
New England.....	20,146	20,491	130,190	102,483	5.1	4.6	5.5	4.9	20,146	14,375	130,190	83,036	5.1	4.0	5.5	4.5
Middle Atlantic.....	38,661	53,540	290,379	307,506	9.8	12.0	12.3	14.6	38,102	35,528	286,931	228,274	9.7	9.9	12.2	12.5
East North Central.....	80,862	87,261	568,223	468,932	20.4	19.5	24.0	22.3	80,807	69,527	567,962	413,357	20.5	19.4	24.1	22.6
West North Central.....	30,755	40,082	172,621	175,376	7.8	8.9	7.3	8.3	30,722	29,694	172,376	144,559	7.8	8.3	7.3	7.9
South Atlantic.....	50,360	53,073	280,599	233,559	12.8	11.8	11.8	11.1	50,244	46,443	279,511	215,615	12.8	13.0	11.8	11.8
East South Central.....	21,672	24,784	80,969	76,863	5.5	5.5	3.4	3.6	21,656	20,188	80,840	65,169	5.5	5.6	3.4	3.6
West South Central.....	60,730	63,238	255,556	211,209	15.4	14.1	10.8	10.2	60,524	53,627	254,694	191,285	15.4	15.0	10.8	10.4
Mountain.....	16,151	22,957	78,605	86,750	4.1	5.1	3.3	4.1	16,063	16,557	77,971	70,554	4.1	4.6	3.3	3.8
Pacific.....	75,445	83,008	512,335	440,743	19.1	18.5	21.6	20.9	75,281	72,312	511,033	418,411	19.1	20.2	21.6	22.9
2-family structures <sup>4</sup>																
All urban places.....	34,233	24,326	156,618	103,042	100.0	100.0	100.0	100.0	34,150	24,326	156,408	103,042	100.0	100.0	100.0	100.0
New England.....	1,650	676	10,700	2,897	4.8	2.8	6.8	2.8	1,650	676	10,700	2,897	4.8	2.8	6.9	2.8
Middle Atlantic.....	6,163	6,390	31,016	32,192	18.0	26.3	19.8	31.2	6,145	6,390	30,926	32,192	18.0	26.3	19.8	31.2
East North Central.....	3,326	3,013	20,617	15,016	9.7	12.4	13.2	14.6	3,270	3,013	20,496	15,016	9.6	12.4	13.1	14.6
West North Central.....	1,778	1,243	8,623	5,721	5.2	5.1	5.5	5.6	1,778	1,243	8,623	5,721	5.2	5.1	5.5	5.6
South Atlantic.....	7,589	4,300	30,829	14,437	22.2	17.7	19.7	14.0	7,589	4,300	30,829	14,437	22.2	17.7	19.7	14.0
East South Central.....	2,602	984	9,211	2,822	7.6	4.0	5.9	2.7	2,602	984	9,211	2,822	7.6	4.0	5.9	2.7
West South Central.....	5,270	2,155	16,456	5,823	15.4	8.9	10.5	5.7	5,270	2,155	16,456	5,823	15.4	8.9	10.5	5.7
Mountain.....	697	637	2,533	2,375	2.0	2.6	1.6	2.3	697	637	2,533	2,375	2.1	2.6	1.6	2.3
Pacific.....	5,158	4,928	26,633	21,758	15.1	20.2	17.0	21.1	5,158	4,928	26,633	21,759	15.1	20.2	17.0	21.1
Multifamily structures <sup>4</sup>																
All urban places.....	77,432	55,745	390,008	238,814	100.0	100.0	100.0	100.0	73,644	47,718	363,009	181,531	100.0	100.0	100.0	100.0
New England.....	2,075	1,434	11,241	5,647	2.7	2.6	2.9	2.4	2,075	1,434	11,241	5,647	2.8	3.0	3.1	3.1
Middle Atlantic.....	22,998	22,988	128,054	115,281	29.7	41.2	32.9	48.3	19,559	14,961	102,154	57,998	26.6	31.4	28.1	31.9
East North Central.....	7,813	5,157	45,734	25,354	10.1	9.2	11.7	10.6	7,464	5,157	44,634	25,354	10.1	10.8	12.3	14.0
West North Central.....	1,909	1,871	7,628	6,263	2.5	3.4	2.0	2.6	1,909	1,871	7,628	6,263	2.6	3.9	2.1	3.4
South Atlantic.....	16,010	6,894	78,936	27,701	20.6	12.4	20.2	11.6	16,010	6,894	78,936	27,701	21.7	14.5	21.8	15.3
East South Central.....	3,425	942	13,522	2,339	4.4	1.7	3.5	1.0	3,425	942	13,522	2,339	4.7	2.0	3.7	1.3
West South Central.....	5,506	2,886	22,346	6,578	7.1	5.2	5.7	2.7	5,506	2,886	22,346	6,578	7.5	6.0	6.2	3.6
Mountain.....	1,362	1,445	5,592	4,131	1.8	2.6	1.4	1.7	1,362	1,445	5,592	4,131	1.8	3.0	1.5	2.3
Pacific.....	16,334	12,128	76,955	45,520	21.1	21.7	19.7	19.1	16,334	12,128	76,955	45,520	22.2	25.4	21.2	25.1

<sup>1</sup> Dwelling units for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of new homebuilding undertaken in some small urban places that do not issue building permits. These data on city dwelling units, unlike the data on nonfarm housing in tables 12-15, 17, and 18, cover homebuilding only in urban places, excluding the areas surrounding the city proper. In addition, the urban dwelling unit information does not represent the volume of new homebuilding actually started during the month, as in the case of nonfarm housing since the building

permit data have not been adjusted for lapsed permits nor for lag between permit issuance and the start of construction. Urban classification is based on the 1940 census.

<sup>2</sup> Components do not always equal totals exactly because of rounding.

<sup>3</sup> Includes units in 1- and 2-family structures with stores.

<sup>4</sup> Includes units in multifamily structures with stores.

during 1946 and the first 9 months of 1947.<sup>20</sup> The resulting figures indicate that a fifth of the non-farm privately financed dwellings started during the emergency housing program were begun in only six industrial areas—Los Angeles, New York, Chicago, San Francisco, Detroit, and Washington, D. C. Areas of greater population in 1940 than some of these, such as Boston and Philadelphia, were less active in homebuilding. The Los Angeles

<sup>20</sup> The survey was accomplished in cooperation with the Housing and Home Finance Agency, then the National Housing Agency. Figures are published only for the industrial areas and urban counties. Industrial areas include the entire county or counties surrounding the central city or cities. The metropolitan districts cover only adjacent and contiguous minor civil divisions or incorporated places having a population of 150 or more per square mile, thus including only the thickly settled territory in and around a city or group of cities.

industrial area far outstripped all the others. The New York area placed second.

Most of the industrial areas and urban counties gained in housing activity during 1947 compared with 1946, but especially notable gains were made in the Boston, Buffalo, Hartford, Washington, D. C., and Miami areas. On the other hand, in many of the representative areas in the Bureau's survey, not only was the increase in private housing activity in 1947 well below the 18-percent rise experienced nationally, but there was a marked decline. The drop in homebuilding during 1947 was steep in the areas represented by Denver, New York, Minneapolis-St. Paul, Sacramento, and Phoenix.

TABLE 20.—New urban dwelling units authorized in each State, by source of funds, 1946-47<sup>1</sup>

Region and State	Number of new dwelling units					Valuation (in thousands) <sup>2</sup>						
	Total		Private		Private, as percent of total		Total		Private		Private, as percent of total	
	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946
All urban places.....	506,453	528,505	501,353	430,195	99.0	81.4	\$2,916,103	\$2,448,277	\$2,980,926	\$2,114,833	98.8	86.4
New England.....	23,871	22,601	23,871	16,485	100.0	72.9	152,132	111,027	152,132	91,580	100.0	82.5
Connecticut.....	4,788	4,159	4,788	2,893	100.0	69.6	31,755	21,021	31,755	17,632	100.0	83.9
Maine.....	1,116	847	1,116	775	100.0	91.5	4,898	3,628	4,898	3,393	100.0	93.5
Massachusetts.....	13,776	14,308	13,776	9,883	100.0	69.1	92,038	70,240	92,038	55,510	100.0	79.0
New Hampshire.....	1,224	867	1,224	667	100.0	76.9	6,729	3,951	6,729	3,320	100.0	84.0
Rhode Island.....	2,721	2,152	2,721	2,052	100.0	95.4	15,259	10,792	15,259	10,489	100.0	97.2
Vermont.....	246	268	246	215	100.0	80.2	1,453	1,395	1,453	1,236	100.0	88.6
Middle Atlantic.....	67,822	82,918	63,806	56,879	94.1	68.6	449,449	454,979	420,012	318,464	93.5	70.0
New Jersey.....	20,949	14,912	19,935	11,519	95.2	77.2	123,825	81,777	118,064	64,356	95.3	78.7
New York.....	27,874	48,907	24,872	29,270	89.2	59.8	190,413	264,157	166,737	160,418	87.6	60.7
Pennsylvania.....	18,999	19,099	18,999	16,090	100.0	84.2	135,211	109,045	135,211	93,690	100.0	85.9
East North Central.....	92,001	95,431	91,541	77,697	99.5	81.4	634,573	509,302	633,092	453,727	99.8	89.1
Illinois.....	21,627	23,566	21,627	19,108	100.0	81.1	167,241	134,947	167,241	122,320	100.0	90.6
Indiana.....	11,362	12,459	11,362	9,857	100.0	79.1	58,523	52,804	58,523	43,569	100.0	82.5
Michigan.....	26,096	24,465	26,096	20,328	100.0	83.1	184,811	137,487	184,811	124,621	100.0	90.6
Ohio.....	23,795	25,094	23,354	20,710	98.1	82.5	166,344	136,115	165,007	121,824	99.2	89.5
Wisconsin.....	9,121	9,857	9,102	7,694	99.8	78.1	57,664	47,949	57,664	41,393	99.7	86.3
West North Central.....	34,442	43,196	34,414	32,808	99.9	76.0	188,872	187,360	188,627	156,543	99.9	83.6
Iowa.....	5,124	8,591	5,124	5,623	100.0	65.5	27,402	35,716	27,402	26,555	100.0	74.4
Kansas.....	6,773	6,088	5,773	4,788	100.0	79.1	26,041	22,485	26,041	19,127	100.0	85.1
Minnesota.....	9,077	12,684	9,077	10,067	100.0	79.4	61,259	64,425	61,259	56,873	100.0	88.3
Missouri.....	8,205	9,620	8,177	7,228	99.7	75.1	45,739	39,852	45,494	32,982	99.4	82.7
Nebraska.....	3,556	2,964	3,556	2,531	100.0	85.4	18,813	13,068	18,813	11,597	100.0	88.7
North Dakota.....	939	1,531	939	1,139	100.0	74.4	4,791	6,031	4,791	4,690	100.0	77.8
South Dakota.....	1,768	1,738	1,768	1,422	100.0	81.8	6,828	5,753	6,828	4,719	100.0	82.0
South Atlantic.....	73,959	64,267	73,843	57,637	99.8	89.7	390,364	275,697	389,277	257,753	99.7	93.5
Delaware.....	257	461	257	441	100.0	95.7	1,676	2,727	1,676	2,633	100.0	96.6
District of Columbia.....	4,303	4,000	4,287	3,040	99.6	76.0	23,912	17,256	23,787	13,835	99.5	80.2
Florida.....	27,381	19,962	27,381	18,939	100.0	94.9	151,384	92,958	151,384	90,690	100.0	97.6
Georgia.....	7,216	8,336	7,216	7,524	100.0	90.3	32,983	29,381	32,983	27,169	100.0	92.5
Maryland.....	7,854	6,912	7,754	6,751	98.7	97.7	43,333	34,850	42,370	33,942	97.8	98.0
North Carolina.....	10,222	9,409	10,222	7,994	100.0	85.0	50,477	34,961	50,477	31,302	100.0	89.5
South Carolina.....	3,089	2,846	3,089	2,203	100.0	77.4	12,719	8,939	12,719	7,356	100.0	82.3
Virginia.....	10,722	9,026	10,722	7,874	100.0	87.2	60,747	42,514	60,747	39,769	100.0	94.0
West Virginia.....	2,915	3,315	2,915	2,871	100.0	86.6	13,135	12,811	13,135	11,057	100.0	88.4
East South Central.....	27,699	26,710	27,683	22,114	99.9	82.8	103,702	82,024	103,573	70,330	99.9	85.7
Alabama.....	10,123	9,515	10,123	8,019	100.0	84.3	34,654	25,756	34,654	22,527	100.0	87.5
Kentucky.....	4,622	4,316	4,622	3,440	100.0	79.7	19,245	14,815	19,245	12,089	100.0	81.6
Mississippi.....	4,581	4,674	4,581	3,945	100.0	84.4	16,512	12,898	16,512	11,157	100.0	86.5
Tennessee.....	8,373	8,205	8,357	6,710	99.8	81.8	33,291	28,555	33,163	24,557	99.6	86.0
West South Central.....	71,512	68,279	71,300	58,568	99.7	85.8	294,358	226,610	293,496	203,686	99.7	89.9
Arkansas.....	4,488	3,154	4,488	2,725	100.0	86.4	18,080	10,727	18,080	9,649	100.0	90.0
Louisiana.....	6,387	7,613	6,387	5,279	100.0	69.3	23,334	21,923	23,334	16,476	100.0	75.2
Oklahoma.....	7,771	7,996	7,771	6,133	100.0	78.7	32,823	28,229	32,823	21,956	100.0	83.7
Texas.....	52,866	49,716	52,654	44,431	99.6	89.4	220,121	167,731	219,259	155,605	99.6	92.8

See footnotes at end of table.

TABLE 20.—New urban dwelling units authorized in each State, by source of funds, 1946-47<sup>1</sup>—Continued

Region and State	Number of new dwelling units						Valuation (in thousands) <sup>2</sup>					
	Total		Private		Private, as percent of total		Total		Private		Private, as percent of total	
	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946
Mountain.....	18,210	25,039	18,122	18,639	99.5	74.4	\$86,731	\$93,256	\$86,097	\$77,060	99.3	82.6
Arizona.....	2,202	2,465	2,202	1,615	100.0	65.5	11,237	8,751	11,237	7,147	100.0	81.7
Colorado.....	4,949	8,347	4,861	6,223	98.2	74.6	24,551	30,717	23,917	25,860	97.4	84.2
Idaho.....	1,774	3,318	1,774	2,245	100.0	67.7	7,638	11,334	7,638	8,403	100.0	74.1
Montana.....	1,336	2,040	1,336	1,414	100.0	69.3	5,113	7,741	5,113	5,428	100.0	70.1
Nevada.....	1,551	1,163	1,551	949	100.0	81.6	9,015	5,675	9,015	5,221	100.0	82.0
New Mexico.....	3,188	2,489	3,188	2,360	100.0	94.8	12,459	7,863	12,459	7,565	100.0	96.2
Utah.....	2,573	4,154	2,573	3,294	100.0	77.9	13,677	16,577	13,677	14,735	100.0	88.9
Wyoming.....	637	1,063	637	599	100.0	36.3	3,041	4,598	3,041	2,701	100.0	58.7
Pacific.....	96,937	100,064	96,773	89,368	99.8	89.3	615,922	598,022	614,620	485,690	99.8	95.6
California.....	82,301	82,935	82,137	74,324	99.8	89.6	529,021	424,021	527,719	406,464	99.8	95.9
Oregon.....	5,673	6,915	5,673	6,105	100.0	88.3	31,966	31,433	31,966	29,371	100.0	93.4
Washington.....	8,963	10,214	8,963	8,939	100.0	87.5	54,935	52,568	54,935	49,855	100.0	94.8

<sup>1</sup> Dwelling units for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of new homebuilding undertaken in some small urban places that do not issue building permits. These data on city dwelling units, unlike the data on nonfarm housing in tables 12-15, 17, and 18, cover homebuilding only in urban places, excluding the areas surrounding the city proper. In addition, the urban

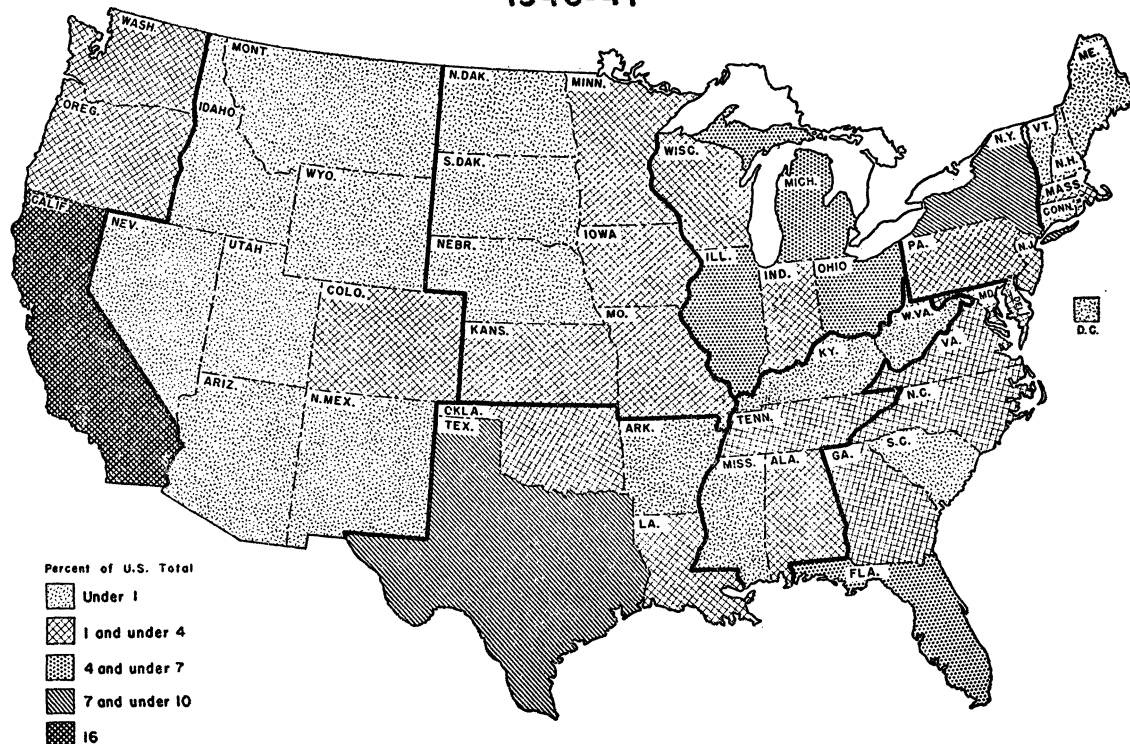
dwelling unit information does not represent the volume of new homebuilding actually started during the month, as in the case of nonfarm housing, since the building permit data have not been adjusted for lapsed permits nor for lag between permit issuance and the start of construction.

<sup>2</sup> Urban classification is based on the 1940 census.

<sup>3</sup> Components do not always equal totals exactly because of rounding.

CHART 6

## NEW URBAN DWELLING UNITS AUTHORIZED 1946-47



Percent of U.S. Total

- Under 1
- 1 and under 4
- 4 and under 7
- 7 and under 10
- 16

UNITED STATES DEPARTMENT OF LABOR  
BUREAU OF LABOR STATISTICS

TABLE 21.—Number of new privately financed nonfarm dwelling units started in some representative industrial areas and urban counties, 1946, and first 9 months of 1947<sup>1</sup>

Area	Number of privately financed nonfarm dwelling units started in—			Percent change, 1946 to 1947	Area	Number of privately financed nonfarm dwelling units started in—			Percent change, 1946 to 1947
	1946	First 9 months of—				1946	1947	1946	
		1947	1946						
<b>Industrial areas:</b>					<b>Industrial areas—Continued</b>				
Atlanta.....	6,785	5,210	5,300	-1.7	Washington, D. C.....	10,890	13,825	8,085	+71.0
Boston.....	5,180	6,550	3,950	+65.8	Worcester.....	1,540	1,665	1,295	+28.6
Buffalo.....	3,075	4,200	2,445	+71.8					
Chicago.....	18,725	15,095	14,760	+2.3	<b>Urban counties, and leading city in each:</b>				
Cleveland.....	6,860	5,575	5,165	+7.9	Adams, Ill. (Quincy).....	130	130	110	+18.2
Columbus.....	2,690	2,375	1,975	+20.3	Cass, N. D. (Fargo).....	285	160	230	-30.4
Dallas.....	5,825	6,415	4,745	+35.2	Chittenden, Vt. (Burlington).....	135	185	130	+42.3
Denver.....	6,785	3,170	5,510	-42.5	Dade, Fla. (Miami).....	7,690	12,905	5,855	+120.4
Detroit.....	16,375	15,635	13,150	+18.9	Garfield, Okla. (Enid).....	420	205	330	-37.9
Fort Worth.....	3,725	4,015	2,965	+35.4	Hancock, Maine (Ellsworth).....	35	55	30	+83.3
Hartford.....	1,405	2,015	1,090	+84.9	Ingham, Mich. (Lansing).....	1,110	1,130	870	+29.9
Indianapolis.....	2,690	2,915	2,110	+38.2	Lancaster, Pa. (Lancaster).....	355	435	260	+67.3
Knoxville-Alcoa.....	2,495	1,635	1,905	-14.2	Logan, W. Va. (Logan).....	115	275	90	+205.6
Los Angeles.....	54,380	44,800	41,660	+7.5	Maricopa, Ariz. (Phoenix).....	3,700	1,865	2,580	-27.7
Memphis.....	4,170	3,930	3,175	+23.8	Marion, Ohio (Marion).....	110	105	90	+16.7
Milwaukee.....	4,405	3,335	3,390	-1.6	Marquette, Mich. (Marquette).....	155	80	140	-42.9
Minneapolis-St. Paul.....	6,910	4,535	5,425	-16.4	Mobile, Ala. (Mobile).....	1,100	750	905	-17.1
New York-Newark-Jersey City.....	40,695	24,610	31,735	-22.5	Plymouth, Mass. (Brockton).....	715	770	595	+29.4
Philadelphia-Camden.....	10,560	10,045	8,545	+17.6	St. Lawrence, N. Y. (Ogdensburg).....	65	80	65	+23.1
Pittsburgh.....	5,720	7,120	4,565	+56.0	Sussex, N. J. (Newton).....	275	310	245	+26.5
Sacramento.....	4,290	2,855	3,570	-20.0	Tioga, N. Y. (Owego).....	45	30	45	-33.3
San Francisco.....	17,075	14,010	13,780	+1.7	Webster, Iowa (Fort Dodge).....	105	90	85	+5.9
Springfield-Holyoke.....	1,175	1,250	985	+33.7	Whatcom, Wash. (Bellingham).....	305	135	260	-48.1
St. Louis.....	6,620	5,690	5,420	+5.0	Wichita, Tex. (Wichita Falls).....	370	310	320	-3.1
Syracuse.....	1,010	1,150	790	+45.6	York, Pa. (York).....	510	600	415	+44.6
Toledo.....	( <sup>2</sup> )	965	( <sup>2</sup> )	( <sup>2</sup> )					

<sup>1</sup> Based on reports from building-permit-issuing officers and from building contractors and others in non-permit-issuing as well as permit-issuing places in the areas shown. Building permit data are corrected for lapsed permits and lag between issuance of permits and the start of construction, by follow-up of construction jobs for which permits have been issued. Industrial areas cover entire county or groups of counties surrounding the central city or cities.

The counties covered by the industrial areas shown are as follows: Atlanta—Cobb, DeKalb, Fulton; Boston—Essex, Middlesex, Norfolk, Suffolk; Buffalo—Erie, Niagara; Chicago—Cook, DuPage, Kane, Lake, and Will Counties, Ill. and Lake County, Ind.; Cleveland—Cuyahoga, Lorain; Columbus—Franklin; Dallas—Dallas; Denver—Adams, Arapahoe, Denver, Jefferson; Detroit—Oakland; Fort Worth—Tarrant; Hartford—Hartford; Indianapolis—Marion; Knoxville-Alcoa—Blount, Knox; Los Angeles—Los Angeles; Memphis—Shelby; Milwaukee—Kenosha, Milwaukee, Racine; Minne-

apolis-St. Paul—Dakota, Hennepin, Ramsey; New York-Newark-Jersey City—Bronx, Queens, Richmond, Kings, New York, and Westchester Counties, N. Y., Bergen, Essex, Middlesex, Passaic, Union, and Hudson Counties, N. J.; Philadelphia-Camden—Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties, Pa., and Burlington, Camden, and Gloucester Counties, N. J.; Pittsburgh—Allegheny, Beaver, Washington, Westmoreland; Sacramento—Sacramento; San Francisco—Alameda, Contra Costa, Marin, San Francisco, San Mateo; St. Louis—St. Louis County and City, Mo., and Madison and St. Clair Counties, Ill.; Springfield-Holyoke—Hampden; Syracuse—Onondaga; Toledo—Lucas; Washington, D. C.—District of Columbia, Montgomery and Prince Georges Counties, Md., Alexandria City, Va., and Arlington and Fairfax Counties, Va; Worcester—Worcester.

<sup>2</sup> Not available.

# Building Construction in Cities

## Volume

City building construction after the war followed roughly the general movement of construction activity as a whole. This was to be expected, since well over two-thirds of all new work in 1946 and 1947 was made up of building construction. (See section on expenditures for new construction,

pp. 1 to 7.) Furthermore, most nonfarm building still takes place within city limits, despite a recent trend towards increased development of suburban areas.<sup>21</sup>

The valuation of building construction authorized<sup>22</sup> in all urban places in 1946 was more than twice as great as in 1945. Additional gains in 1947 brought the year's total to over 5½ billion dollars—the highest dollar volume since 1929.

TABLE 22.—Indexes of the valuation of urban building authorized, by class of construction, 1929-47<sup>1</sup>

Period	Indexes (monthly average, 1935-39=100)			
	All building construction	New residential building <sup>2</sup>	New nonresidential building	Additions, alterations, and repairs
1929.....	283.1	353.5	319.5	187.2
1930.....	162.0	151.1	233.3	121.8
1931.....	114.3	107.7	159.1	91.2
1932.....	41.9	26.7	64.8	44.9
1933.....	34.6	22.3	45.0	45.3
1934.....	35.4	18.9	44.6	58.4
1935.....	60.7	46.4	69.5	79.0
1936.....	96.5	91.9	101.4	99.8
1937.....	106.6	98.6	112.7	116.3
1938.....	108.3	113.9	106.3	98.1
1939.....	127.9	149.3	110.1	106.9
1940.....	160.2	167.5	146.9	106.2
1941.....	166.4	197.6	153.5	115.5
1942.....	128.8	113.7	162.4	77.0
1943.....	60.1	72.2	47.2	66.2
1944.....	52.4	42.8	47.2	87.6
1945.....	93.6	82.1	89.0	131.7
1946.....	225.9	311.1	156.8	213.3
First quarter.....	274.7	290.9	262.6	269.8
Second quarter.....	241.0	380.1	131.5	212.3
Third quarter.....	227.8	349.0	127.8	214.2
Fourth quarter.....	160.1	224.4	105.5	156.8
1947.....	264.3	364.6	184.2	246.5
First quarter.....	177.8	238.1	123.2	183.5
Second quarter.....	259.8	361.8	171.9	258.3
Third quarter.....	317.5	437.8	221.3	296.6
Fourth quarter.....	302.0	420.6	220.3	247.6

<sup>1</sup> Building for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of building undertaken in some small urban places that do not issue building permits. Estimates for 1929 through 1941 were derived by applying link relatives to data obtained from all reporting cities, the number of which increased steadily each year to almost 2,500 in 1941; figures for 1942 onward were derived by expanding a carefully stratified sample of approximately 2,500, reporting cities to estimate for all urban areas.

<sup>2</sup> Includes value of hotels, dormitories, tourist cabins, and other nonhouse-keeping residential building.

In 1942, when the war construction program was at its height, city building was down 23 percent from the preceding year and totaled less than half the amount authorized in 1947. Building in cities was held to comparatively low levels during the war years, not only by restrictions on unessential construction but also by the very nature of the construction activity. Most military and naval facilities, the predominant type of war construction, are of necessity located outside of urban areas.

Compared with 1942, valuations of city building authorized in 1947 were slightly higher for new nonresidential building, but were well over three times as great for both new residential construction and additions, alterations, and repairs. About three-fifths of the urban building in 1942 was financed with Federal funds. By 1947 the federally financed proportion was less than 5 percent. The decline in Federal contract awards for building within city limits was quite steady over the 5-year period, except for a spurt in the

<sup>21</sup> See pp. 25-26.

<sup>22</sup> Building construction for which building permits were issued and Federal contracts awarded, plus an estimate of building undertaken in some small urban places that do not issue building permits. Estimating procedures for all types of urban building construction are the same as those for residential construction described on page 18. It should be noted, however, that data in this section do not represent the volume of construction actually started during the month. They should also be distinguished from the figures on expenditures for new construction put in place, presented on pp. 1 to 7.

TABLE 23.—Urban building authorized, by source of funds, 1942-47<sup>1</sup>

Period	Valuation (in thousands)							
	All building construction				New residential building <sup>2</sup>			
	Total	Non-Federal	Federal	Non-Federal as percent of total	Total	Non-Federal	Federal	Non-Federal as percent of total
1942.....	\$2,707,573	\$1,066,958	\$1,640,615	39.4	\$918,413	\$602,609	\$315,804	65.6
1943.....	1,262,133	703,584	558,549	55.7	583,496	375,169	208,327	64.3
1944.....	1,101,350	753,441	347,909	68.4	345,670	289,270	56,400	83.7
1945.....	1,966,913	1,177,181	249,732	87.3	663,160	631,562	31,598	95.2
1946.....	4,743,414	4,303,971	439,443	90.7	2,513,789	2,158,201	355,588	85.9
January.....	323,598	303,907	19,691	93.9	142,792	123,700	19,092	86.6
February.....	372,987	342,172	30,815	91.7	158,552	137,832	20,720	86.9
March.....	745,419	721,151	24,268	96.7	286,230	265,921	20,309	92.9
April.....	436,774	393,367	43,407	90.1	259,093	223,119	35,974	86.1
May.....	416,175	359,925	56,250	86.5	265,905	213,230	52,675	80.2
June.....	412,455	348,363	64,092	84.5	242,848	188,875	53,973	77.8
July.....	423,779	358,537	65,242	84.6	247,664	193,534	54,130	78.1
August.....	424,844	351,003	73,841	82.6	263,806	194,979	68,827	73.9
September.....	347,064	316,346	30,718	91.1	193,514	173,792	19,722	89.8
October.....	337,568	324,726	12,842	96.2	194,198	184,405	9,793	95.0
November.....	272,840	263,347	9,493	96.5	149,941	149,659	282	99.8
December.....	229,911	221,127	8,784	96.2	109,155	109,155	0	100.0
1947.....	5,549,718	5,356,457	193,261	96.5	2,945,934	2,910,735	35,199	98.8
January.....	269,706	249,884	19,822	92.7	132,865	125,194	7,671	94.2
February.....	279,121	269,908	9,213	96.7	140,171	140,171	0	100.0
March.....	384,515	372,890	11,625	97.0	207,987	206,401	1,586	99.2
April.....	446,222	429,581	16,641	96.3	241,830	239,881	1,949	99.2
May.....	428,878	419,138	9,740	97.7	227,947	227,947	0	100.0
June.....	488,843	461,379	27,464	94.4	261,093	254,576	6,517	97.5
July.....	537,317	530,253	7,064	98.7	273,265	272,937	328	99.9
August.....	567,979	538,296	29,683	94.8	301,691	299,987	1,604	99.5
September.....	561,536	555,213	6,323	98.9	309,495	307,265	2,230	99.3
October.....	604,165	596,962	7,203	98.8	347,874	344,079	3,795	98.9
November.....	501,556	480,243	21,313	96.8	268,866	262,348	6,518	97.6
December.....	479,881	452,710	27,171	94.3	232,950	229,950	3,000	98.7

Period	Valuation (in thousands)							
	New nonresidential building				Additions, alterations, and repairs			
	Total	Non-Federal	Federal	Non-Federal as percent of total	Total	Non-Federal	Federal	Non-Federal as percent of total
1942.....	\$1,510,688	\$222,998	\$1,287,690	14.8	\$278,472	\$241,351	\$37,121	86.7
1943.....	439,131	106,540	332,591	24.3	239,606	221,869	17,637	92.6
1944.....	438,909	169,078	269,831	38.5	316,771	295,093	21,678	93.2
1945.....	827,614	639,342	188,272	77.3	476,139	446,277	29,862	93.7
1946.....	1,458,602	1,416,497	42,105	97.1	771,023	729,272	41,751	94.6
January.....	123,387	123,293	94	99.9	57,419	56,914	505	99.1
February.....	149,351	141,130	8,221	94.5	65,084	63,210	1,874	97.1
March.....	337,718	334,802	2,916	99.1	121,381	120,428	953	99.2
April.....	109,070	107,032	2,038	98.1	68,611	68,216	395	99.1
May.....	90,415	90,365	50	99.9	59,855	56,330	3,525	94.1
June.....	106,229	104,531	1,698	98.4	63,378	54,957	8,421	86.7
July.....	110,048	105,380	4,668	95.8	66,067	59,623	6,444	90.2
August.....	92,370	92,359	11	100.0	68,668	63,665	5,003	92.7
September.....	94,673	89,709	4,964	94.8	58,877	52,845	6,032	89.8
October.....	85,262	83,989	1,273	98.5	58,108	56,332	1,776	96.9
November.....	81,523	73,107	8,416	89.7	41,376	40,581	795	98.1
December.....	78,556	70,800	7,756	90.1	42,200	41,172	1,028	97.6
1947.....	1,712,672	1,583,165	129,507	92.4	891,112	862,557	28,555	96.8
January.....	86,879	76,585	10,294	88.2	49,961	48,105	1,856	96.3
February.....	87,720	79,760	7,960	90.9	51,230	49,977	1,253	97.6
March.....	111,905	103,124	8,781	92.2	64,624	63,365	1,259	98.1
April.....	129,474	116,208	13,266	89.8	74,918	73,492	1,426	98.1
May.....	128,196	120,724	7,472	94.2	72,736	70,467	2,269	96.9
June.....	141,919	130,420	11,499	91.9	85,830	76,383	9,447	89.0
July.....	170,181	167,007	3,174	98.1	93,870	90,309	3,561	96.2
August.....	182,041	155,677	26,364	85.5	84,346	82,632	1,714	98.0
September.....	162,234	159,066	3,168	98.0	89,807	88,882	925	99.0
October.....	168,334	166,270	2,064	98.8	87,957	86,613	1,344	98.5
November.....	166,472	153,140	13,322	92.0	66,217	64,755	1,462	97.8
December.....	177,315	155,183	22,132	87.5	69,615	67,577	2,038	97.1

<sup>1</sup> Building for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of building undertaken in some small urban places that do not issue building permits. These data cover building only in urban places, excluding the suburban areas surrounding the city proper. They do not represent the volume of building actually started during the month, since no adjustment has been made for lapsed

building permits nor for lag between permit issuance and the start of construction. Components do not always equal totals exactly because of rounding. Urban classification is based on the 1940 census.

<sup>2</sup> Includes value of hotels, dormitories, tourist cabins, and other nonhouse-keeping residential building; for valuation of housekeeping dwellings, see tables 16, 19, and 20.

summer of 1946 when the temporary re-use housing program was in full swing.

Urban building permit valuations reached an all-time monthly high in March 1946, prior to the effective date of the construction limitation order, VHP-1. The rest of the year was marked by a nearly constant down-trend. In contrast, total urban building in 1947 rose almost without interruption from low in January to peak in October. The year ended with December valuations amounting to more than double the total recorded for city building in December 1946.

New industrial building was the only major category of urban building construction to show a decrease from 1946 to 1947. New commercial building was practically the same in both years. On the other hand, valuations for new home construction and for additions, alterations, and repair work were up 17 and 16 percent, respectively. Community buildings (churches, hospitals, schools, etc.) in 1947 were more than double the 1946 volume; government buildings (post offices, city halls, etc.) had tripled; and public works and utility buildings had increased by 41 percent.

TABLE 24.—New urban nonresidential building authorized, by general type of building and by region, 1946-47 <sup>1</sup>

Region	Valuation (in thousands)					
	1947	1946	Percent change from 1946	1947	1946	Percent change from 1946
	Industrial buildings <sup>2</sup>			Commercial buildings <sup>3</sup>		
All urban places.....	\$321,845	\$397,237	-19.0	\$686,921	\$669,574	+2.6
New England.....	25,952	19,477	+33.2	32,853	43,164	-23.9
Middle Atlantic.....	57,755	77,845	-25.8	90,725	74,569	+21.7
East North Central.....	118,866	133,599	-11.2	119,958	119,011	+8
West North Central.....	19,890	29,161	-31.8	57,240	51,822	+10.5
South Atlantic.....	20,549	34,612	-40.6	106,788	87,405	+22.2
East South Central.....	13,573	14,688	-7.6	34,680	34,647	+1
West South Central.....	17,519	13,145	+33.3	91,548	82,156	+11.4
Mountain.....	2,852	4,417	-35.4	26,855	26,057	+3.1
Pacific.....	45,090	70,293	-35.9	126,273	150,743	-16.2
	Community buildings <sup>4</sup>			Public buildings <sup>5</sup>		
All urban places.....	406,891	190,163	+114.0	40,699	12,042	+238.0
New England.....	25,759	19,739	+30.5	3,418	371	+821.3
Middle Atlantic.....	80,190	21,247	+277.4	4,712	1,493	+215.6
East North Central.....	62,541	42,412	+47.5	8,171	880	+828.5
West North Central.....	34,639	19,160	+80.8	1,696	190	+792.6
South Atlantic.....	40,161	22,570	+77.9	6,285	988	+536.1
East South Central.....	16,895	12,954	+30.4	830	116	+615.5
West South Central.....	65,309	25,963	+151.5	4,430	665	+566.2
Mountain.....	18,366	5,367	+242.2	2,416	70	+3,361.4
Pacific.....	63,030	20,781	+203.7	8,741	7,269	+20.3
	Public works and utility buildings <sup>6</sup>			All other buildings <sup>7</sup>		
All urban places.....	143,824	102,241	+40.7	112,492	87,345	+28.8
New England.....	15,086	15,638	-3.5	6,764	5,328	+27.0
Middle Atlantic.....	24,968	10,052	+149.4	13,392	9,944	+34.7
East North Central.....	35,972	23,383	+53.8	27,556	19,374	+42.2
West North Central.....	8,798	6,108	+43.1	9,961	6,485	+53.6
South Atlantic.....	19,046	20,037	-4.9	7,213	6,635	+8.0
East South Central.....	4,154	862	+381.9	3,005	2,318	+29.7
West South Central.....	7,648	5,048	+51.5	6,618	5,664	+16.8
Mountain.....	3,520	1,486	+136.9	4,153	2,889	+43.8
Pacific.....	24,695	19,627	+25.8	33,529	29,710	+13.9

<sup>1</sup> Building for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of building undertaken in some small urban places that do not issue building permits. These data cover building only in urban places, excluding the suburban areas surrounding the city proper. They do not represent the volume of building actually started during the month, since no adjustment has been made for lapsed permits nor for lag between permit issuance and the start of construction. Components do not always equal totals exactly because of rounding. Urban classification is based on the 1940 census.

<sup>2</sup> Includes factories, navy yards, army ordnance plants, bakeries, ice plants, industrial warehouses, and other buildings at the site of these and similar production plants.

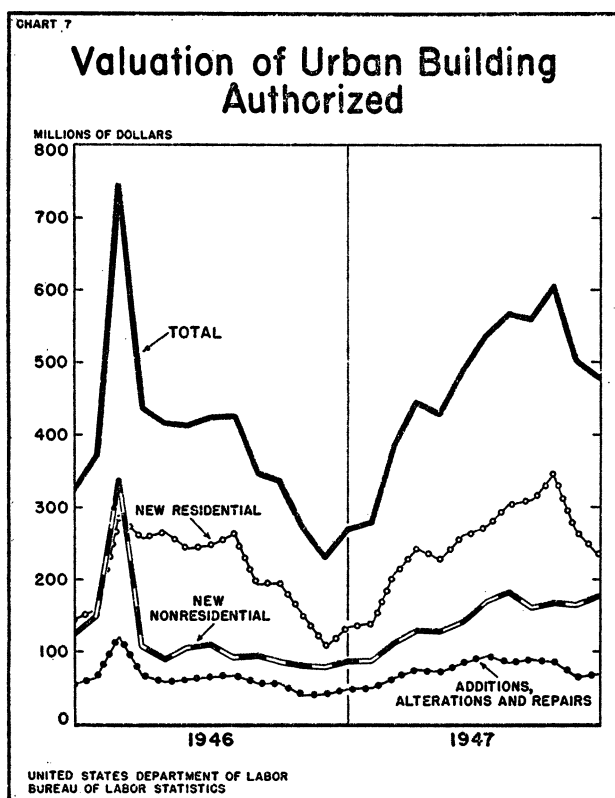
<sup>3</sup> Includes amusement and recreation buildings, stores and other mercantile buildings, commercial garages, gasoline and service stations, etc.

<sup>4</sup> Includes churches, hospitals and other institutional buildings, schools, libraries, etc.

<sup>5</sup> Includes Federal, State, county, and local government buildings, such as post offices, courthouses, city halls, fire and police stations, army barracks, naval stations.

<sup>6</sup> Includes railroad, bus, and airport buildings, roundhouses, radio stations, gas and electric plants, public comfort stations, etc.

<sup>7</sup> Includes private garages, sheds, stables and barns, and other buildings not elsewhere classified.



### Location

All sections of the country shared in the rise in city building valuations in 1947. The greatest increases, around 30 percent, occurred in the South Atlantic States and the West South

Central States. However, the largest dollar volume was reported for the East North Central States, where more than a fifth of the Nation's total urban building was authorized in both 1946 and 1947. This densely populated geographic division led all others in both the new building and the additions, alterations, and repairs categories.

The Pacific region was only slightly under the East North Central in the level of postwar city building as a whole, and California ranked first among all the States, continuing the construction boom in California that got under way during the war years. In 1946, New York held second place among the States, and Texas third; the relative positions of these two States were reversed in 1947.

Cities of all sizes participated in the increase from 1946 to 1947 in total urban building valuations. The gain was relatively less, however, in the largest municipalities. In 1947 the dollar volume of new building (both residential and nonresidential) showed a slight decline from the preceding year in the largest cities, those with 500,000 or more population. But in the smallest cities (population less than 10,000) there were substantial gains—31 percent in new residential construction and 14 percent in new nonresidential building. The over-all increase of 16 percent in addition, alteration, and repair work was shared by all cities, large and small. Again however, the rise was greatest in the smallest places.

TABLE 25.—New urban nonresidential building authorized, by type of building and source of funds, 1946-47<sup>1</sup>

Type of building	Total			Non-Federal			Federal		
	1947	1946	Percent change from 1946	1947	1946	Percent change from 1946	1947	1946	Percent change from 1946
	Valuation (in thousands)								
All types.....	\$1,712,672	\$1,458,602	+17.4	\$1,583,165	\$1,416,497	+11.8	\$129,507	\$42,105	+207.6
Amusement buildings <sup>2</sup> .....	43,216	33,123	+30.5	43,216	33,123	+30.5	0	0	0
Churches.....	76,234	36,971	+106.2	76,234	36,971	+106.2	0	0	0
Factories and workshops <sup>3</sup> .....	321,945	397,237	-19.0	321,845	395,562	-18.6	0	1,675	-100.0
Commercial garages.....	61,713	73,513	-16.1	61,713	73,513	-16.1	0	0	0
Private garages.....	77,914	58,490	+33.2	77,914	58,490	+33.2	0	0	0
Service stations.....	25,440	23,088	+10.2	25,440	23,088	+10.2	0	0	0
Institutional buildings <sup>4</sup> .....	144,795	55,163	+162.5	79,036	41,595	+90.0	65,760	13,568	+384.7
Office and bank buildings.....	95,258	83,998	+13.4	95,258	83,998	+13.4	0	0	0
Public buildings <sup>5</sup> .....	40,699	12,042	+238.0	14,874	3,625	+310.3	25,825	8,417	+206.8
Public works and utility buildings <sup>6</sup> .....	143,824	102,241	+40.7	143,824	93,032	+54.6	0	9,209	-100.0
Educational buildings <sup>7</sup> .....	185,961	98,029	+89.6	147,939	88,793	+66.6	37,922	9,236	+310.6
Sheds.....	14,621	12,210	+19.7	14,621	12,210	+19.7	0	0	0
Stores and other mercantile buildings <sup>8</sup> .....	461,294	455,852	+1.2	461,294	455,852	+1.2	0	0	0
All other.....	19,957	16,645	+19.9	19,957	16,645	+19.9	0	0	0

See footnotes at end of table



TABLE 25.—New urban nonresidential building authorized, by type of building and source of funds, 1946-47 <sup>1</sup>—Con.

Type of building	Total			Non-Federal			Federal		
	1947	1946	Percent change from 1946	1947	1946	Percent change from 1946	1947	1946	Percent change from 1946
	Number of buildings								
All types .....	239, 539	226, 574	+5. 7	238, 252	226, 038	+5. 4	1, 287	536	+140. 1
Amusement buildings <sup>2</sup> .....	2, 038	1, 940	+5. 1	2, 038	1, 940	+5. 1	0	0	0
Churches .....	3, 028	1, 914	+58. 2	3, 028	1, 914	+58. 2	0	0	0
Factories and workshops <sup>3</sup> .....	13, 576	17, 001	-20. 1	13, 576	16, 986	-20. 1	0	15	-100. 0
Commercial garages .....	5, 969	7, 600	-21. 5	5, 969	7, 600	-21. 5	0	0	0
Private garages .....	124, 948	109, 284	+14. 3	124, 948	109, 284	+14. 3	0	0	0
Service stations .....	3, 956	4, 030	-1. 8	3, 956	4, 030	-1. 8	0	0	0
Institutional buildings <sup>4</sup> .....	766	815	-6. 0	713	661	+7. 9	53	154	-65. 6
Office and bank buildings .....	3, 216	3, 679	-12. 6	3, 216	3, 679	-12. 6	0	0	0
Public buildings <sup>5</sup> .....	488	266	+83. 5	277	108	+156. 5	211	158	+33. 5
Public works and utility buildings <sup>6</sup> .....	1, 886	1, 550	+21. 7	1, 886	1, 544	+22. 2	0	6	-100. 0
Educational buildings <sup>7</sup> .....	2, 833	1, 193	+137. 5	1, 810	990	+82. 8	1, 023	203	+403. 9
Sheds .....	20, 251	19, 716	+2. 7	20, 251	19, 716	+2. 7	0	0	0
Stores and other mercantile buildings <sup>8</sup> .....	43, 222	44, 553	-3. 0	43, 222	44, 553	-3. 0	0	0	0
All other .....	13, 362	13, 033	+2. 5	13, 362	13, 033	+2. 5	0	0	0

<sup>1</sup> Building for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of building undertaken in some small urban places that do not issue building permits. These data cover building only in urban places, excluding the suburban areas surrounding the city proper. They do not represent the volume of building actually started during the month, since no adjustment has been made for lapsed permits nor for lag between permit issuance and the start of construction. Components do not always equal totals exactly because of rounding.

Urban classification is based on the 1940 census.

<sup>2</sup> Includes recreational structures such as theatres, halls, auditoriums, club and association buildings (without bedrooms), lodge buildings, natatoriums, bathhouses, locker buildings, baseball or other observation stands, stadiums, gymnasiums, amusement park buildings, pavilions, rinks, etc.

<sup>3</sup> Includes industrial warehouses.

<sup>4</sup> Includes hospitals, asylums, medical clinic buildings, sanitariums, charitable institutions, etc., and affiliated buildings.

<sup>5</sup> Includes Federal, State, county, and local government buildings, such as post offices, courthouses, city halls, fire and police stations, prisons, arsenals, armories.

<sup>6</sup> Includes railroad, bus, and airport stations, pumping stations, round-houses, freight houses, car barns, ferry houses, radio stations, signal towers, gas and electric plants, public comfort stations, incinerators, etc.

<sup>7</sup> Includes all buildings affiliated with schools, colleges, libraries, museums, observatories, etc.

<sup>8</sup> Includes commercial warehouses.

In 1946, New York City outranked all other places in valuations for total building construction and for residential building, followed closely by Los Angeles. New York topped the list in both categories largely because of the initiation of a huge redevelopment program by the City Housing Authority.

In 1947, Los Angeles took first place for all building authorized, with New York second. This West Coast city led the country also in valuations for residential construction and for mercantile, office, and public buildings.

TABLE 26.—Urban building authorized, by region and State and by source of funds, 1946-47<sup>1</sup>

Region and State	Valuation (in thousands)															
	All building construction				New residential building <sup>2</sup>				New nonresidential building				Additions, alterations, and repairs			
	1947		1946		1947		1946		1947		1946		1947		1946	
	Total	Non-Federal	Total	Non-Federal	Total	Non-Federal	Total	Non-Federal	Total	Non-Federal	Total	Non-Federal	Total	Non-Federal	Total	Non-Federal
All urban places.....	\$5,549,718	\$5,356,457	\$4,743,414	\$4,303,971	\$2,945,934	\$2,910,735	\$2,513,789	\$2,158,201	\$1,712,672	\$1,583,165	\$1,458,602	\$1,416,497	\$891,112	\$862,557	\$771,023	\$729,272
New England.....	330,940	324,601	284,247	254,830	153,045	153,037	112,324	92,389	109,831	105,288	103,716	98,360	68,064	66,276	68,207	64,081
Connecticut.....	69,137	68,304	57,444	53,576	31,756	31,756	21,279	17,051	24,628	23,901	22,419	22,404	12,752	12,647	13,746	13,521
Maine.....	12,324	11,736	10,954	10,563	4,926	4,926	3,654	3,419	4,828	4,409	4,657	4,657	2,569	2,401	2,643	2,587
Massachusetts.....	200,317	197,160	173,891	156,238	92,887	92,887	71,211	56,268	60,222	63,526	60,765	60,593	41,208	40,755	41,915	39,387
New Hampshire.....	13,565	13,251	8,657	8,004	6,747	6,747	3,951	3,326	3,452	3,204	2,248	2,248	3,300	2,458	2,458	2,436
Rhode Island.....	32,145	30,721	29,171	26,970	15,260	15,260	10,808	10,505	10,505	9,384	8,962	12,508	7,502	7,502	6,495	6,495
Vermont.....	3,452	3,429	4,130	4,004	1,468	1,468	1,421	1,239	1,286	1,286	1,122	1,122	698	675	1,587	1,247
Middle Atlantic.....	885,907	805,360	804,405	656,134	452,349	452,349	461,022	319,714	271,742	228,178	195,151	192,391	161,817	154,276	148,252	144,028
New Jersey.....	234,452	224,917	171,462	153,039	124,952	124,952	119,191	82,301	64,584	67,280	64,343	54,027	42,250	41,384	34,628	34,428
New York.....	385,357	321,758	404,494	293,875	190,633	190,633	166,957	267,829	160,817	129,829	93,043	72,922	64,895	61,758	63,743	60,834
Pennsylvania.....	266,099	258,685	228,449	209,220	136,764	136,764	110,872	94,513	74,663	70,787	67,696	66,141	54,671	51,134	49,881	48,766
East North Central.....	1,193,602	1,174,417	1,020,461	952,190	635,528	634,047	527,707	466,133	466,133	372,866	358,500	338,659	335,842	185,208	181,869	150,215
Illinois.....	323,252	319,726	293,975	278,946	167,377	167,377	137,144	122,945	105,411	102,590	116,784	116,567	50,464	49,760	40,047	39,334
Indiana.....	328,703	305,821	94,355	81,863	58,602	58,602	54,243	43,659	31,536	29,505	28,486	22,836	18,565	17,713	16,626	15,368
Michigan.....	317,946	313,399	264,843	250,563	185,056	185,056	138,703	125,070	85,220	81,874	89,978	80,973	46,670	46,469	36,162	35,520
Ohio.....	328,296	322,328	263,047	245,006	166,701	165,365	149,400	132,965	109,749	106,435	70,354	69,139	51,845	50,528	43,293	42,902
Wisconsin.....	115,406	113,142	104,241	95,912	57,792	57,646	48,217	41,494	39,949	38,097	38,097	37,327	17,665	17,399	17,967	17,091
West North Central.....	382,911	366,400	364,934	322,176	190,002	189,572	190,726	157,913	132,163	118,210	112,927	107,144	60,746	58,523	61,281	57,114
Iowa.....	59,580	57,945	64,378	52,824	27,476	27,476	26,712	26,712	22,133	20,970	19,295	18,069	9,970	9,498	8,980	7,994
Kansas.....	48,622	47,554	41,195	37,807	26,271	26,271	22,626	19,170	13,227	12,566	11,656	11,452	9,124	8,716	6,913	6,785
Minnesota.....	110,713	109,162	109,352	101,001	61,488	61,488	65,212	57,402	31,918	31,182	24,623	24,211	17,307	16,493	19,517	19,388
Missouri.....	97,864	95,948	92,239	82,346	43,946	43,700	41,504	33,257	39,683	38,257	34,623	34,459	14,235	13,990	16,112	14,600
Nebraska.....	38,892	32,851	31,404	28,817	19,063	19,063	13,128	11,649	13,901	7,926	11,702	11,672	5,928	5,861	6,674	5,496
North Dakota.....	14,407	10,515	9,602	8,146	4,792	4,792	6,166	4,726	7,748	4,020	2,517	2,517	1,866	1,703	919	903
South Dakota.....	12,834	12,515	16,764	11,635	6,965	6,965	5,987	4,953	3,553	3,288	8,511	4,734	2,316	2,261	2,266	1,048
South Atlantic.....	714,998	696,181	537,509	495,441	399,942	398,842	283,172	262,239	200,042	189,535	171,247	155,433	114,114	107,804	83,090	77,769
Delaware.....	4,920	4,741	7,216	6,942	1,676	1,676	2,899	2,634	1,399	1,280	1,967	1,967	1,844	1,785	2,350	2,341
District of Columbia.....	42,966	40,538	46,235	32,498	23,912	23,787	18,132	14,134	8,599	8,007	20,993	11,505	10,455	8,744	7,110	6,859
Florida.....	255,232	253,312	160,362	157,176	158,802	158,789	95,536	93,216	59,460	58,015	40,052	39,735	36,970	36,508	24,774	24,225
Georgia.....	76,742	74,417	59,257	55,324	33,587	33,587	30,343	27,335	25,571	24,000	19,042	18,552	17,584	16,829	9,872	9,437
Maryland.....	68,211	65,894	66,882	65,726	43,864	42,902	35,079	34,371	12,745	11,877	22,301	22,269	11,603	11,105	9,502	9,112
North Carolina.....	88,481	86,638	69,275	64,262	50,689	50,689	35,375	31,535	28,302	26,575	26,040	25,986	9,491	9,375	7,960	6,705
South Carolina.....	29,607	26,837	25,451	18,492	12,748	12,748	9,390	7,538	11,798	9,173	12,107	7,355	5,061	4,916	3,954	3,599
Virginia.....	113,163	109,944	78,174	72,792	61,523	61,523	43,504	40,386	36,500	35,663	21,495	21,173	15,141	12,758	13,175	11,233
West Virginia.....	34,775	33,871	24,657	22,239	13,142	13,142	12,914	11,090	15,668	14,945	7,250	6,891	5,965	5,784	4,493	4,258
East South Central.....	210,354	205,176	178,781	161,793	104,063	103,934	85,028	71,529	73,138	69,403	65,583	64,734	33,153	31,839	28,170	25,630
Alabama.....	65,631	64,356	53,093	47,780	34,668	34,668	26,785	22,655	20,493	19,468	17,233	16,881	10,470	10,220	9,075	8,244
Kentucky.....	41,633	39,734	32,172	28,441	19,331	19,331	15,405	12,214	16,872	15,633	13,071	13,004	5,430	4,770	3,696	3,223
Mississippi.....	31,529	31,152	25,521	23,068	16,574	16,574	13,088	11,266	9,753	9,537	8,575	8,560	5,202	5,041	3,858	3,242
Tennessee.....	71,560	69,934	67,995	62,604	33,490	33,361	29,750	25,994	26,020	24,765	26,704	26,289	12,050	11,808	11,541	10,821
West South Central.....	570,550	550,141	433,443	401,731	300,903	300,041	236,618	212,170	193,072	175,475	132,641	131,626	76,576	74,625	64,184	57,935
Arkansas.....	34,536	33,263	18,516	16,331	10,975	10,975	9,736	9,955	8,930	5,734	5,597	6,065	5,817	5,186	5,000	5,000
Louisiana.....	67,079	55,696	46,019	39,188	23,387	23,387	23,022	16,807	33,050	21,824	14,151	14,108	10,642	10,485	8,846	8,273
Oklahoma.....	61,874	60,330	49,677	43,734	33,597	33,597	26,395	22,122	20,450	19,026	15,537	15,511	7,828	7,707	7,745	6,101
Texas.....	407,061	400,853	315,852	298,476	225,403	224,541	176,226	163,505	129,617	125,695	97,219	96,410	52,041	50,616	42,407	38,561
Mountain.....	175,719	166,987	164,664	143,707	88,821	88,187	97,427	80,138	58,162	50,597	40,287	39,764	28,736	28,182	26,980	23,805
Arizona.....	25,351	24,675	19,784	17,841	11,633	11,633	9,088	7,393	9,965	9,528	8,056	7,900	3,764	3,515	2,640	2,548
Colorado.....	50,360	45,100	47,934	41,335	24,839	24,205	30,871	26,014	16,780	12,350	8,265	8,083	8,741	8,544	8,798	7,238
Idaho.....	17,060	16,731	19,433	16,108	7,783	7,783	11,885	8,591	5,904	5,592	4,831	4,831	3,373	3,356	2,717	2,686
Montana.....	13,798	13,191	13,130	10,338	5,294	5,294	8,149	5,618	6,296	5,689	3,036	3,036	2,208	2,208	1,945	1,684
Nevada.....	15,904	15,684	12,594	12,084	9,442	9,442	6,786	6,332	3,876	3,671	3,216	3,177	2,585	2,571	2,592	2,575
New Mexico.....	22,372	21,653	15,349	14,451	12,843	12,843	8,329	8,019	6,435	5,742	4,198	4,198	3,094	3,068	2,822	2,234
Utah.....	24,470	23,816	29,228	26,514	13,835	13,835	17,316	15,303	7,032	6,393	7,267	7,142	3,603	3,588	4,645	4,069
Wyoming.....	6,404	6,117	7,242	5,036	3,152	3,152	5,003	2,868	1,874	1,633	1,418	1,397	1,378	1,332	821	771
Pacific.....	1,085,637	1,067,126	954,940	915,969	621,281	619,980	519,785	495,971	301,658	287,983	298,391	291,203	162,697	159,163	136,764	128,795
California.....	905,352	880,289	785,023	753,344	532,043	532,043	433,720	415,852	242,48							

TABLE 27.—Urban building authorized, by city-size class and source of funds, 1946-47 <sup>1</sup>

City-size class	Total				Non-Federal				Federal			
	Valuation (in thousands)		Percentage distribution		Valuation (in thousands)		Percentage distribution		Valuation (in thousands)		Percentage distribution	
	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946
<b>All building construction</b>												
All urban places .....	\$5,549,718	\$4,743,414	100.0	100.0	\$5,356,457	\$4,303,971	100.0	100.0	\$193,261	\$439,443	100.0	100.0
500,000 and over .....	1,104,000	1,094,839	19.9	23.1	1,034,129	936,082	19.3	21.7	69,872	158,757	36.2	36.1
100,000 to 500,000 .....	1,189,384	1,033,470	21.4	21.8	1,159,025	945,094	21.7	22.0	30,359	88,376	15.7	20.1
50,000 to 100,000 .....	585,608	451,678	10.6	9.5	551,011	415,418	10.3	9.7	34,598	36,260	17.9	8.3
25,000 to 50,000 .....	611,241	509,854	11.0	10.8	595,381	472,421	11.1	11.0	15,861	37,433	8.2	8.5
10,000 to 25,000 .....	900,822	736,671	16.2	15.5	874,649	673,342	16.3	15.6	26,173	63,329	13.5	14.4
5,000 to 10,000 .....	679,502	540,781	12.3	11.4	670,811	509,147	12.5	11.8	8,691	31,634	4.5	7.2
2,500 to 5,000 .....	479,160	376,121	8.6	7.9	471,452	352,467	8.8	8.2	7,708	23,654	4.0	5.4
<b>New residential building <sup>2</sup></b>												
All urban places .....	2,945,934	2,513,789	100.0	100.0	2,910,735	2,158,201	100.0	100.0	35,198	355,587	100.0	100.0
500,000 and over .....	551,660	559,985	18.7	22.3	524,976	428,319	18.0	19.9	26,684	131,665	75.8	37.0
100,000 to 500,000 .....	563,427	489,144	19.1	19.4	558,271	423,797	19.2	19.6	5,155	65,347	14.6	18.4
50,000 to 100,000 .....	281,515	219,678	9.6	8.7	280,160	188,406	9.6	8.7	1,355	31,172	3.9	8.8
25,000 to 50,000 .....	313,797	264,688	10.7	10.5	313,342	234,028	10.8	10.8	455	30,660	1.3	8.6
10,000 to 25,000 .....	511,558	429,173	17.4	17.1	510,095	376,824	17.5	17.5	1,463	52,349	4.2	14.7
5,000 to 10,000 .....	424,971	328,307	14.4	13.1	424,958	300,607	14.6	13.9	13	27,700	(*)	7.8
2,500 to 5,000 .....	299,006	222,914	10.1	8.9	298,933	206,220	10.3	9.6	73	16,694	.2	4.7
<b>New nonresidential building</b>												
All urban places .....	1,712,672	1,458,602	100.0	100.0	1,583,165	1,416,497	100.0	100.0	129,507	42,105	100.0	100.0
500,000 and over .....	348,224	351,810	20.3	24.1	311,837	334,596	19.7	23.6	36,387	17,214	28.1	40.9
100,000 to 500,000 .....	380,895	327,475	22.2	22.5	365,580	318,074	23.1	22.4	15,315	9,401	11.8	22.3
50,000 to 100,000 .....	201,465	147,009	11.8	10.1	172,155	145,641	10.9	10.3	29,310	1,468	22.6	3.5
25,000 to 50,000 .....	198,346	157,381	11.6	10.8	185,540	156,261	11.7	11.0	12,805	1,120	9.9	2.7
10,000 to 25,000 .....	274,737	204,884	16.0	14.0	252,168	199,033	15.9	14.1	22,569	5,851	17.4	13.9
5,000 to 10,000 .....	179,448	154,409	10.5	10.6	172,855	153,133	10.9	10.8	6,593	1,276	5.1	3.0
2,500 to 5,000 .....	129,558	115,634	7.6	7.9	123,030	109,859	7.8	7.8	6,528	5,775	5.1	13.7
<b>Additions, alterations, and repairs</b>												
All urban places .....	891,112	771,023	100.0	100.0	862,557	729,272	100.0	100.0	28,555	41,751	100.0	100.0
500,000 and over .....	204,117	183,044	22.9	23.8	197,316	173,166	22.9	23.7	6,801	9,878	23.8	28.7
100,000 to 500,000 .....	245,063	216,851	27.5	28.1	235,174	203,223	27.3	27.9	9,889	13,628	34.6	32.6
50,000 to 100,000 .....	102,628	85,091	11.5	11.0	98,695	81,471	11.4	11.2	3,932	3,620	13.8	8.7
25,000 to 50,000 .....	99,099	87,785	11.1	11.4	96,499	82,132	11.2	11.2	2,600	5,653	9.1	13.5
10,000 to 25,000 .....	114,528	102,614	12.9	13.3	112,386	97,485	13.0	13.4	2,142	5,129	7.5	12.3
5,000 to 10,000 .....	75,083	58,065	8.4	7.5	72,997	55,407	8.5	7.6	2,086	2,658	7.3	6.4
2,500 to 5,000 .....	50,596	37,573	5.7	4.9	49,490	36,388	5.7	5.0	1,106	1,185	3.9	2.8

<sup>1</sup> Building for which building permits were issued and Federal contracts awarded in all urban places, including an estimate of building undertaken in some small urban places that do not issue building permits. These data cover building only in *urban* places, excluding the suburban areas surrounding the city proper. They do not represent the volume of building actually started during the month since no adjustment has been made for lapsed building permits nor for lag between permit issuance and the start of construction.

Urban classification and city size are based on the 1940 census.  
<sup>2</sup> Includes value of hotels, dormitories, tourist cabins, and other nonhouse-keeping residential building; for valuation of housekeeping dwellings, see tables 16, 19, and 20.

<sup>3</sup> Less than one-tenth of 1 percent.

TABLE 28.—Cities leading in various types of building construction authorized, 1947<sup>1</sup>

Type of building construction and leading cities	Valuation (in thousands)	Type of building construction and leading cities	Valuation (in thousands)
<b>All building construction:</b> <sup>2</sup>		<b>Institutional buildings:</b> <sup>6</sup>	
Los Angeles, Calif.....	\$259,041	New York, N. Y.....	\$23,637
New York, N. Y.....	206,799	Buffalo, N. Y.....	14,283
Detroit, Mich.....	147,607	Sherveport, La.....	9,745
Chicago, Ill.....	120,743	Boston, Mass.....	7,395
Houston, Tex.....	72,631	Fresno, Calif.....	5,675
Philadelphia, Pa.....	72,386	Grand Island, Nebr.....	5,245
Dallas, Tex.....	53,082	Houston, Tex.....	4,529
Miami, Fla.....	51,628		
<b>New residential building:</b> <sup>3</sup>		<b>Public buildings:</b> <sup>7</sup>	
Los Angeles, Calif.....	146,208	Los Angeles, Calif.....	1,993
New York, N. Y.....	122,533	Tallahassee, Fla.....	1,700
Detroit, Mich.....	86,892	Fort Worth, Tex.....	1,448
Chicago, Ill.....	45,982	Pasadena, Calif.....	1,092
Philadelphia, Pa.....	41,266		
Miami, Fla.....	33,115	<b>Public works and utility buildings:</b> <sup>8</sup>	
Houston, Tex.....	32,959	Detroit, Mich.....	7,298
Dallas, Tex.....	30,898	Oswego, N. Y.....	7,058
		Los Angeles, Calif.....	6,920
<b>Factories and work shops:</b> <sup>4</sup>		Chicago, Ill.....	6,335
Chicago, Ill.....	18,193	Newport News, Va.....	6,037
Detroit, Mich.....	7,678	Woodbridge, N. J.....	4,005
Philadelphia, Pa.....	7,427	Norfolk, Va.....	3,803
Cleveland, Ohio.....	6,762		
Los Angeles, Calif.....	6,503	<b>Educational buildings:</b> <sup>9</sup>	
Hillside, N. J.....	5,754	New York, N. Y.....	8,414
Houston, Tex.....	5,188	Detroit, Mich.....	5,699
New York, N. Y.....	4,843	Los Angeles, Calif.....	5,544
Milwaukee, Wis.....	4,682	Cambridge, Mass.....	4,693
Louisville, Ky.....	4,388	Chicago, Ill.....	4,247
St. Louis, Mo.....	4,252		
Portland, Oreg.....	4,125	<b>Churches:</b>	
		Detroit, Mich.....	2,273
<b>Stores and other mercantile buildings:</b> <sup>5</sup>		Minneapolis, Minn.....	2,114
Los Angeles, Calif.....	15,082	Chicago, Ill.....	2,103
Detroit, Mich.....	11,663	Dallas, Tex.....	2,094
Chicago, Ill.....	9,102	New York, N. Y.....	1,781
Houston, Tex.....	8,738	Houston, Tex.....	1,715
New York, N. Y.....	8,707	Los Angeles, Calif.....	1,552
Atlanta, Ga.....	6,235	Kansas City, Mo.....	1,235
St. Louis, Mo.....	5,845		
Miami, Fla.....	5,734	<b>Commercial garages:</b>	
Denver, Colo.....	5,481	New York, N. Y.....	2,662
Cleveland, Ohio.....	5,256	Detroit, Mich.....	2,005
		Houston, Tex.....	1,636
<b>Office and bank buildings:</b>		Columbus, Ohio.....	1,061
Los Angeles, Calif.....	18,243		
Houston, Tex.....	6,048	<b>Amusement buildings:</b> <sup>10</sup>	
Tallahassee, Fla.....	2,701	Miami, Fla.....	1,957
Minneapolis, Minn.....	2,347	San Antonio, Tex.....	1,699
Chicago, Ill.....	2,140	San Francisco, Calif.....	1,051

<sup>1</sup> Building for which building permits were issued and Federal contracts awarded in urban places, excluding the suburban areas surrounding the city proper. These data do not represent the volume of building actually started during the month, since no adjustment has been made for lapsed permits nor for lag between permit issuance and the start of construction.

Urban classification is based on the 1940 census.

<sup>2</sup> Covers additions, alterations, and repairs, as well as new residential and new nonresidential building.

<sup>3</sup> Includes hotels, dormitories, tourist cabins, and other nonhousekeeping residential building.

<sup>4</sup> Includes industrial warehouses.

<sup>5</sup> Includes commercial warehouses.

<sup>6</sup> Includes hospitals, asylums, medical clinic buildings, sanitariums, charitable institutions, etc., and affiliated buildings.

<sup>7</sup> Includes Federal, State, county, and local government buildings, such as post offices, courthouses, city halls, fire and police stations, jails, prisons, arsenals and armories.

<sup>8</sup> Includes railroad, bus, and airport buildings, roundhouses, radio stations, gas and electric plants, public comfort stations, etc.

<sup>9</sup> Includes all buildings affiliated with schools, colleges, libraries, museums, observatories, etc.

<sup>10</sup> Includes recreational structures such as theatres, halls, auditoriums, club and association buildings (without bedrooms), lodge buildings, natatoriums, bathhouses, locker buildings, baseball and other observation stands, stadiums, gymnasiums, amusement park buildings, pavilions, rinks, etc.

TABLE 29.—Building construction authorized in cities with 1940 population of 50,000 or more, 1946 and 1947<sup>1</sup>

State and city	Population in 1940	All building construction				New residential building <sup>2</sup>				New nonresidential building				Additions, alterations, and repairs				Number of new dwelling units	
		1947		1946		1947		1946		1947		1946		1947		1946		1947	1946
		Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)		
<b>Alabama:</b>																			
Birmingham.....	267,583	7,176	\$18,041	7,857	\$15,764	1,664	\$8,808	1,850	\$6,764	749	\$5,200	790	\$4,267	4,763	\$4,033	5,217	\$4,733	2,416	2,067
Mobile.....	78,720	1,957	5,493	2,236	5,297	671	1,746	668	1,545	290	2,539	372	2,442	996	1,208	1,196	1,310	688	771
Montgomery.....	78,084	2,149	6,015	2,436	4,281	519	3,835	927	2,663	249	1,258	238	1,079	1,381	922	1,271	539	965	876
<b>Arizona:</b>																			
Phoenix.....	65,414	2,153	9,656	1,998	8,534	682	4,100	722	3,265	512	4,303	433	4,281	959	1,253	843	988	818	817
<b>Arkansas:</b>																			
Little Rock.....	88,039	3,585	11,722	3,049	7,585	991	7,323	828	4,100	328	2,846	317	1,751	2,266	1,553	1,904	1,734	1,713	844
<b>California:</b>																			
Berkeley.....	85,547	2,007	8,590	2,075	7,079	209	2,249	313	1,703	283	4,090	355	4,037	1,515	2,251	1,407	1,339	309	389
Fresno.....	60,685	2,624	14,786	2,569	8,750	730	4,287	909	4,500	402	8,720	355	2,747	1,492	1,779	1,305	1,503	755	909
Glendale.....	82,582	2,280	10,360	2,244	8,272	492	5,747	603	4,203	675	3,182	704	2,963	1,113	1,431	937	1,106	972	857
Long Beach.....	164,271	20,015	35,208	18,199	37,426	2,571	18,306	2,156	13,841	2,588	8,359	3,552	16,652	14,856	8,543	12,491	6,933	3,979	3,330
Los Angeles.....	1,504,277	62,210	259,041	56,954	227,742	17,019	146,208	19,647	121,786	19,774	73,260	17,592	73,722	25,417	39,573	19,715	32,234	21,138	24,532
Oakland.....	302,163	5,607	27,389	5,550	23,363	1,101	11,455	1,140	8,056	1,543	8,865	1,695	8,319	2,963	7,069	2,715	6,988	1,708	1,406
Pasadena.....	81,864	3,619	13,819	3,551	12,959	637	6,526	713	5,052	621	5,100	675	6,229	2,361	2,193	2,163	1,678	883	782
Sacramento.....	105,958	2,860	12,849	3,048	13,427	978	6,565	1,493	7,942	511	3,805	412	3,532	1,371	2,479	1,138	1,953	1,174	1,779
San Diego.....	203,341	11,839	30,428	10,410	23,100	2,731	19,863	2,555	13,051	2,855	5,635	2,563	6,630	6,253	4,930	5,202	3,419	3,438	2,931
San Francisco.....	634,536	8,269	48,290	7,708	50,959	2,672	24,099	3,014	19,530	257	12,221	297	18,134	5,340	11,970	4,397	13,295	3,102	3,530
San Jose.....	68,457	1,834	11,451	1,924	10,376	746	6,031	909	6,026	322	4,107	303	3,059	712	1,313	712	1,291	818	994
Santa Monica.....	53,500	1,949	11,817	2,140	9,894	556	7,870	730	6,197	553	2,853	651	2,893	840	1,094	759	804	1,255	1,265
Stockton.....	54,714	1,397	6,627	1,488	6,110	517	3,599	593	3,037	230	1,999	203	1,487	650	1,029	692	1,586	675	604
<b>Colorado:</b>																			
Denver.....	322,412	10,104	29,178	15,119	30,049	2,173	14,474	4,513	19,364	1,403	8,701	1,825	5,013	6,528	6,003	8,781	5,672	2,692	5,181
Pueblo.....	52,162	1,099	1,966	1,206	2,132	308	989	329	1,117	185	598	209	444	606	379	668	571	308	332
<b>Connecticut:</b>																			
Bridgeport.....	147,121	1,166	5,953	1,267	5,304	295	2,468	210	1,428	258	2,391	216	2,531	613	1,094	841	1,345	441	222
Hartford.....	166,287	1,662	10,171	2,019	10,459	119	1,654	312	1,267	141	5,423	177	6,142	1,402	3,094	1,530	3,050	207	366
New Britain.....	68,685	788	1,707	1,151	3,080	143	711	414	1,830	111	641	90	803	534	355	677	447	143	413
New Haven.....	160,605	1,936	7,774	2,493	8,087	202	2,152	732	2,891	261	3,955	334	3,256	1,453	1,667	1,427	1,940	338	732
Waterbury.....	99,314	873	4,317	1,013	3,238	259	1,713	426	1,985	154	1,964	259	928	460	640	328	325	261	432
<b>Delaware:</b>																			
Wilmington.....	112,504	1,294	3,332	1,405	5,063	101	892	193	1,540	176	744	90	1,433	1,017	1,696	1,122	2,090	111	208
<b>District of Columbia:</b>																			
Washington.....	663,091	7,713	42,964	7,897	46,253	1,934	23,912	2,469	18,132	667	8,597	553	21,011	5,112	10,455	4,875	7,110	4,303	4,000
<b>Florida:</b>																			
Jacksonville.....	173,065	5,446	21,128	5,326	15,686	1,312	8,227	1,357	6,745	730	8,160	742	5,322	3,404	4,741	3,227	3,619	1,641	1,460
Miami.....	172,172	13,321	51,628	9,962	26,396	4,270	33,115	1,962	18,012	1,653	11,848	1,260	7,771	7,398	6,665	6,740	4,713	6,543	2,615
St. Petersburg.....	60,812	5,461	17,426	3,624	11,088	2,116	12,413	1,504	8,104	502	2,157	389	1,817	2,843	2,856	1,731	1,167	2,295	1,533
Tampa.....	108,391	7,573	9,316	7,671	8,157	867	3,787	841	2,841	642	2,765	625	2,866	6,064	2,764	6,205	2,450	887	868
<b>Georgia:</b>																			
Atlanta.....	302,288	4,483	28,439	5,310	23,403	1,085	8,559	1,410	8,996	627	10,785	778	8,036	2,771	9,095	3,113	6,371	1,379	1,533
Augusta.....	65,919	1,726	3,592	860	1,965	285	1,242	265	881	204	1,035	161	546	1,237	1,315	434	538	285	263
Columbus.....	53,280	778	3,687	800	3,483	182	624	110	464	154	2,722	192	2,577	442	341	498	442	206	120
Macon.....	57,865	2,033	2,937	1,978	2,438	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	1,429	835	1,487	783	132	175	153
Savannah.....	95,996	1,572	5,886	1,879	3,443	517	3,196	470	1,636	214	942	247	1,025	841	1,748	1,162	782	178	480
<b>Illinois:</b>																			
Chicago.....	3,396,808	11,715	120,743	12,293	122,405	4,410	45,982	6,441	40,578	3,439	47,397	2,905	62,719	3,866	27,364	2,947	19,108	5,455	7,341
Cicero.....	64,712	466	3,098	349	2,707	151	1,034	74	437	207	1,937	178	2,069	108	127	97	201	158	76
Decatur.....	59,305	620	4,057	567	2,349	229	1,515	271	1,275	213	2,055	161	872	178	487	135	202	229	250
East St. Louis.....	75,609	589	2,307	482	3,135	201	976	191	566	121	850	94	2,182	267	481	197	387	213	191
Evanston.....	65,389	604	8,154	665	6,910	236	4,575	297	2,310	130	2,830	114	3,769	238	749	254	831	502	441
Oak Park.....	66,015	384	1,607	436	866	32	897	89	416	95	164	45	192	257	546	302	258	165	89
Peoria.....	105,087	1,718	4,461	1,360	4,436	314	2,102	310	1,891	262	1,231	179	1,556	1,142	1,118	871	989	314	316
Rockford.....	84,637	1,217	4,713	1,242	3,736	328	1,958	517	2,260	256	1,552	177	687	633	1,203	548	789	352	539
Springfield.....	75,503	1,125	4,865	1,138	4,915	342	2,413	470	2,448	267	1,692	177	1,704	516	760	491	763	351	472
<b>Indiana:</b>																			
East Chicago.....	54,637	265	2,614	230	3,570	36	230	34	234	117	1,909	97	3,173	112	475	99	163	40	46
Evansville.....	97,062	2,037	4,624	2,209	3,573	704	2,379	321	1,132	249	1,263	286	939	1,084	982	1,602	1,502	787	337
Fort Wayne.....	118,410	1,587	8,647	1,767	7,002	676	4,915	787	4,010	293	2,818	253	2,011	618	727	981	772	772	790

See footnotes at end of table.

TABLE 29.—Building construction authorized in cities with 1940 population of 50,000 or more, 1946 and 1947.—Continued

State and city	Population in 1940	All building construction				New residential building *				New nonresidential building				Additions, alterations, and repairs				Number of new-dwelling units	
		1947		1946		1947		1946		1947		1946		1947		1946		1947	1946
		Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)		
<b>Indiana—Continued</b>																			
Gary	111,710	2,113	\$9,194	1,732	\$6,079	1,074	\$6,603	679	\$3,825	411	\$1,643	397	\$1,465	628	\$948	656	\$1,089	1,199	686
Hammond	70,184	1,585	6,723	1,866	7,682	625	4,710	725	4,548	389	1,351	350	2,296	571	662	791	638	659	744
Indianapolis	386,972	4,842	26,806	4,284	14,783	1,661	14,125	1,714	8,316	1,103	5,512	207	769	2,178	7,169	2,363	5,698	2,377	1,771
South Bend	101,268	2,856	9,814	3,067	7,085	630	4,585	902	4,312	89	2,764	82	1,843	2,137	2,465	2,083	930	640	906
Terre Haute	62,693	1,201	1,372	1,078	3,059	115	331	529	1,746	299	650	240	1,074	787	391	309	239	119	527
<b>Iowa:</b>																			
Cedar Rapids	62,120	2,231	4,057	2,528	5,644	350	1,657	647	2,791	435	1,588	324	2,227	1,446	812	1,557	626	348	645
Davenport	66,039	3,012	4,637	3,118	4,270	304	2,500	434	2,455	223	921	169	742	2,485	1,216	2,515	1,073	319	438
Des Moines	159,819	2,334	12,661	2,695	13,255	960	5,281	1,380	6,374	720	5,991	675	4,808	1,389	654	1,389	640	1,573	968
Sioux City	101,364	888	3,293	853	2,740	230	923	412	1,669	243	1,515	206	774	415	855	235	297	231	442
Waterloo	51,743	1,405	4,413	1,458	5,137	312	1,673	530	2,717	381	2,130	301	1,903	712	610	627	517	312	688
<b>Kansas:</b>																			
Kansas City	121,458	1,126	3,847	1,053	2,997	287	1,112	267	895	250	1,466	242	1,244	589	1,269	544	858	304	295
Topeka	67,833	1,112	3,780	1,521	4,257	412	2,120	852	3,221	271	915	276	633	429	745	393	463	446	855
Wichita	114,966	4,894	16,643	4,862	14,003	1,665	9,687	1,531	7,416	518	3,828	613	4,126	2,711	3,128	2,718	2,461	1,993	1,690
<b>Kentucky:</b>																			
Covington	62,018	213	835	220	958	28	184	21	103	45	316	29	503	140	335	170	352	28	22
Louisville	319,077	3,389	18,769	3,399	15,957	1,785	10,993	1,847	7,103	758	6,729	731	7,973	846	1,047	821	881	2,665	1,877
<b>Louisiana:</b>																			
New Orleans	494,537	2,514	12,452	3,449	15,072	1,226	4,683	2,313	6,778	285	3,901	301	5,128	1,003	3,868	835	3,166	1,335	2,427
Shreveport	98,167	3,394	22,004	3,141	9,040	1,173	6,114	1,238	5,169	323	13,856	397	2,200	1,898	2,034	1,506	1,671	1,202	1,247
<b>Maine:</b>																			
Portland	73,643	1,093	3,336	1,051	2,643	165	1,036	104	604	108	1,443	124	1,002	820	857	823	1,037	183	104
<b>Maryland:</b>																			
Baltimore	859,100	13,535	45,168	13,651	50,016	3,472	29,244	4,493	25,897	898	6,777	878	16,316	9,165	9,147	8,280	7,803	5,513	5,045
<b>Massachusetts:</b>																			
Boston	770,816	8,969	31,241	8,697	42,906	555	7,703	706	4,391	366	13,468	261	26,927	8,048	10,070	7,730	11,588	975	1,023
Brockton	62,343	679	3,113	751	1,683	149	960	103	635	109	6,721	103	324	421	481	645	724	170	127
Cambridge	110,879	1,548	9,331	1,734	8,818	7	305	709	2,212	118	7,494	96	4,842	1,423	1,532	929	1,764	57	766
Fall River	115,428	720	1,788	712	2,025	117	618	202	902	159	227	153	474	444	943	357	640	118	204
Holyoke	63,750	443	1,767	373	1,826	129	859	39	248	37	344	52	1,059	277	564	282	519	130	36
Lawrence	84,323	602	1,997	595	1,611	98	648	48	345	97	696	85	705	407	653	462	561	100	49
Lowell	101,389	588	1,871	858	1,697	81	407	323	1,137	103	1,037	84	124	404	427	451	436	82	323
Lynn	98,123	606	2,962	737	2,897	115	789	217	1,026	119	1,010	123	1,218	372	1,163	397	653	124	218
Malden	58,010	826	1,798	756	2,293	81	512	104	802	59	617	77	1,070	686	669	575	421	82	150
Medford	63,083	351	2,003	605	1,926	76	549	346	1,313	74	1,142	70	397	201	312	189	216	77	354
New Bedford	110,341	996	2,166	1,257	2,649	124	620	268	1,085	186	683	203	629	686	863	786	935	126	268
Newton	69,873	929	7,625	865	3,522	304	3,600	248	2,294	76	3,416	85	664	549	609	632	564	385	296
Quincy	75,810	1,785	4,064	2,098	3,618	204	1,856	273	1,446	244	1,060	184	1,086	1,337	1,148	1,641	1,086	324	274
Somerville	102,177	1,271	2,500	1,097	3,609	23	586	1	5	38	970	19	826	1,210	944	1,077	778	63	2
Springfield	149,554	1,752	11,220	2,371	9,606	584	3,997	927	4,151	294	3,913	252	2,995	874	3,310	1,192	2,460	574	929
Worcester	193,694	1,511	8,033	1,584	7,443	476	2,937	712	3,983	246	3,495	192	1,639	789	1,601	680	1,821	563	800
<b>Michigan:</b>																			
Dearborn	63,584	2,590	17,137	1,768	9,819	1,275	10,712	753	5,453	741	4,529	602	3,958	754	1,896	413	408	1,352	774
Detroit	1,623,452	21,626	147,607	21,082	116,848	9,501	86,892	9,261	64,039	5,183	40,610	4,409	36,562	6,942	20,105	7,412	16,247	10,973	9,496
Flint	151,543	4,526	11,141	4,426	10,497	800	5,605	884	4,346	760	3,302	684	4,243	2,966	2,234	2,858	1,908	875	691
Grand Rapids	164,292	5,773	9,460	4,984	8,632	647	3,774	832	4,189	675	1,608	459	4,551	4,078	3,693	3,025	668	873	
Highland Park	50,810	221	3,301	187	1,351	1	1	2	15	63	2,919	31	880	157	381	154	456	1	2
Kalamazoo	54,097	1,333	2,809	1,254	3,232	60	344	268	1,590	148	1,139	128	1,009	1,125	1,326	858	633	62	271
Lansing	78,753	1,522	4,612	1,434	4,483	353	2,091	390	1,961	297	1,432	230	1,610	872	1,089	814	912	355	391
Pontiac	66,626	1,478	4,438	1,214	9,608	229	1,353	343	1,755	339	2,553	293	7,450	910	632	578	403	241	345
Saginaw	82,794	1,683	3,405	1,757	4,460	378	1,207	578	1,847	463	1,380	354	1,964	842	818	825	649	378	602
<b>Minnesota:</b>																			
Duluth	101,065	2,276	4,540	2,518	4,432	300	1,505	512	1,960	282	1,423	236	578	1,694	1,612	1,770	1,894	299	524
Minneapolis	492,370	6,486	30,931	7,689	29,770	1,255	11,370	2,779	14,645	1,089	13,318	886	6,898	4,142	6,243	4,024	8,227	1,381	2,935
St. Paul	287,736	3,916	19,126	4,667	20,118	1,050	11,059	1,712	12,277	1,073	3,955	825	3,655	4,112	2,130	4,186	1,174	1,797	
<b>Mississippi:</b>																			
Jackson	62,107	2,382	9,661	2,048	6,946	675	4,945	698	3,474	359	2,918	239	2,171	1,348	1,111	1,301	934	835	
<b>Missouri:</b>																			
Kansas City	399,178	2,878	17,668	3,565	18,202	756	6,450	1,453	7,505	740	8,068	778	6,027	1,382	3,150	1,334	4,670	910	1,545
St. Joseph	75,711	527	1,154	283	759	96	237	67	202	146	641	85	283	285	276	131	324	99	68
St. Louis	816,048	5,256	28,493	6,356	31,639	516	5,787	1,652	9,059	2,001	15,848	1,808	14,691	2,739	6,858	2,896	7,989	841	2,370

Springfield.....	61,238	2,299	4,762	2,526	4,336	578	2,305	650
Nebraska:								
Lincoln.....	81,984	2,916	9,875	2,574	7,124	914	6,524	439
Omaha.....	223,844	3,903	8,823	3,855	13,155	877	4,805	1,032
New Hampshire:								
Manchester.....	77,685	2,183	4,830	2,109	3,578	444	2,487	333
New Jersey:								
Atlantic City.....	64,094	1,059	2,017	1,478	2,188	16	104	167
Bayonne.....	79,108	633	1,786	936	1,774	56	845	213
Camden.....	117,536	1,389	9,885	1,593	5,314	208	2,031	359
East Orange.....	68,945	1,106	4,348	1,254	2,310	57	2,511	157
Elizabeth.....	109,912	578	5,395	528	2,789	151	3,691	190
Hoboken.....	50,115	714	2,315	954	1,786	0	0	0
Irvington.....	55,328	426	2,462	288	799	165	1,523	26
Jersey City.....	301,173	572	6,357	967	3,878	7	56	375
Newark.....	429,760	1,726	16,080	1,562	11,127	537	3,588	326
Passaic.....	61,394	640	3,038	1,079	2,575	41	1,585	194
Paterson.....	139,656	1,468	3,108	1,898	3,821	65	502	305
Trenton.....	124,697	1,512	3,058	1,345	2,858	59	308	168
Union City.....	56,173	434	795	469	614	1	9	1
New York:								
Albany.....	130,577	2,533	7,184	1,794	4,935	103	2,804	92
Binghamton.....	78,309	1,626	4,010	2,050	3,102	113	1,057	286
Buffalo.....	575,901	2,825	25,906	3,170	16,197	252	2,991	255
Mount Vernon.....	67,362	716	2,655	487	1,640	36	830	70
New Rochelle.....	58,408	538	2,785	712	2,557	89	1,379	192
New York City <sup>1</sup> :	7,454,995	10,016	206,799	23,293	254,399	4,820	122,533	17,882
Bronx Borough.....	1,394,711	1,137	14,781	1,157	10,578	406	6,547	410
Brooklyn Borough.....	2,698,285	1,623	46,872	2,348	34,367	476	16,655	1,126
Manhattan Borough.....	1,889,924	1,668	62,268	12,281	141,757	113	37,821	10,634
Queens Borough.....	1,297,634	5,041	79,062	6,932	64,412	3,582	59,560	5,504
Richmond Borough.....	174,441	547	3,816	575	3,285	243	1,950	208
Niagara Falls.....	78,029	1,844	6,654	1,699	4,233	383	2,519	238
Rochester.....	324,975	2,729	15,847	2,428	10,918	376	6,597	478
Schenectady.....	87,549	1,311	2,541	1,355	4,553	123	695	179
Syracuse.....	205,967	1,147	6,503	1,364	7,254	318	2,853	847
Troy.....	70,304	726	2,166	1,189	4,350	18	141	625
Utica.....	160,518	448	2,283	368	2,502	129	703	75
Yonkers <sup>4</sup> .....	142,598	1,051	10,288	1,122	6,843	515	8,332	485
North Carolina:								
Asheville.....	51,310	777	2,951	685	1,753	267	1,312	226
Charlotte.....	100,899	1,767	10,955	1,677	9,700	1,183	7,243	917
Durham.....	60,195	744	5,646	610	4,380	407	2,888	301
Greensboro.....	59,319	1,424	8,888	1,078	4,299	943	6,112	616
Winston-Salem.....	79,815	1,596	6,057	1,010	3,387	444	3,550	430
Ohio:								
Akron.....	244,791	4,501	18,037	4,422	13,880	982	7,201	1,363
Canton.....	108,401	1,407	4,527	1,751	4,672	342	2,636	362
Cincinnati.....	455,610	14,242	31,117	13,797	35,625	808	9,042	1,300
Cleveland.....	878,336	7,553	43,028	7,155	38,547	1,728	12,987	1,885
Cleveland Heights.....	54,992	420	3,394	310	1,361	177	2,229	97
Columbus.....	306,087	4,353	23,849	4,898	19,464	1,875	14,361	2,313
Dayton.....	210,718	2,605	13,259	2,448	10,488	927	7,902	744
Hamilton.....	50,592	1,085	4,542	937	2,562	419	2,909	302
Lakewood.....	69,160	282	1,577	271	1,294	45	725	67
Springfield.....	70,662	1,307	5,038	1,163	2,937	250	1,726	306
Toledo.....	282,349	2,664	12,017	2,606	10,213	608	4,533	835
Youngstown.....	167,720	1,275	6,528	1,408	4,822	365	2,323	459
Oklahoma:								
Oklahoma City.....	204,424	2,863	14,276	3,104	13,822	1,559	8,205	1,463
Tulsa.....	142,157	2,418	11,288	2,670	9,611	1,085	6,057	1,273
Oregon: Portland.....	305,394	6,582	39,953	7,696	34,922	1,472	17,890	1,964
Pennsylvania:								
Allentown.....	96,904	779	5,632	819	4,498	227	2,560	268
Altoona.....	80,214	2,462	2,708	2,461	1,491	119	709	185
Bethlehem.....	58,490	379	2,671	423	2,581	146	1,678	162
Chester.....	59,285	164	1,146	490	3,713	35	199	358
Erie.....	116,955	1,401	4,663	1,608	5,739	433	2,194	545
Harrisburg.....	83,893	707	5,662	930	4,237	172	1,081	448
Johnstown.....	66,668	629	994	747	1,641	39	180	43
Lancaster.....	61,345	939	4,640	868	1,628	212	1,858	68
McKeesport.....	55,355	955	1,567	896	1,203	57	444	32
Philadelphia.....	1,931,334	10,096	72,386	10,191	65,499	5,229	41,266	5,524
Pittsburgh.....	671,659	5,055	19,700	5,526	18,204	740	8,648	1,102

See footnotes at end of table.

2, 068	181	1, 418	311	1, 424	1, 540	1, 039	1, 566	844	589	637
2, 618	514	2, 165	392	1, 921	1, 488	1, 186	1, 743	2, 585	1, 023	447
4, 920	398	1, 864	584	6, 334	2, 628	2, 154	2, 239	1, 901	931	1, 059
1, 484	206	1, 170	224	778	1, 533	1, 173	1, 552	1, 316	460	344
755	51	972	28	225	992	941	1, 283	1, 208	16	167
943	39	437	32	384	538	504	691	447	169	219
2, 145	157	6, 639	113	1, 578	1, 024	1, 215	1, 121	1, 591	349	362
1, 164	55	934	38	381	994	903	1, 059	775	336	304
1, 447	154	1, 221	139	854	273	483	259	488	717	289
0	8	637	23	735	706	1, 678	901	1, 053	0	0
237	58	649	51	219	203	290	211	343	326	36
2, 206	94	2, 041	54	538	471	4, 260	538	1, 134	13	377
1, 877	249	6, 720	228	5, 120	940	5, 772	1, 008	4, 130	695	419
885	109	785	321	803	490	668	564	887	240	194
1, 564	115	1, 382	120	605	1, 288	1, 224	1, 473	1, 662	99	309
3, 933	83	1, 198	66	765	1, 370	1, 552	1, 111	1, 160	61	172
9	9	233	8	142	424	553	460	1	1	1
767	53	2, 473	50	1, 800	2, 377	1, 907	1, 652	2, 368	449	108
1, 574	146	1, 764	150	625	1, 367	1, 189	1, 614	903	159	372
1, 665	657	18, 037	633	4, 675	1, 916	4, 875	2, 282	9, 857	466	270
635	56	1, 097	41	478	624	728	376	527	106	70
1, 774	68	792	57	227	381	614	463	556	90	192
194, 461	1, 244	54, 006	945	29, 406	3, 952	30, 260	4, 466	30, 533	18, 150	39, 497
5, 607	185	4, 975	120	2, 117	546	3, 259	627	2, 864	908	888
27, 739	259	25, 481	216	2, 313	888	4, 736	1, 006	4, 315	2, 474	4, 443
105, 995	122	7, 727	109	16, 575	1, 433	16, 720	1, 538	19, 187	5, 530	25, 776
53, 562	576	14, 515	388	7, 165	883	4, 987	1, 040	3, 685	8, 893	8, 151
1, 558	102	1, 308	112	1, 235	202	558	255	492	345	239
1, 464	263	3, 240	248	1, 858	1, 198	895	1, 213	911	398	249
3, 828	452	6, 816	409	3, 863	1, 901	3, 434	1, 541	3, 227	1, 090	631
1, 081	131	685	145	2, 551	1, 057	1, 161	1, 031	921	124	177
4, 567	270	2, 490	229	2, 147	559	1, 160	288	540	374	874
3, 137	50	872	104	496	658	1, 153	460	717	19	637
452	130	1, 109	198	1, 642	189	421	95	508	129	76
3, 535	152	922	167	2, 351	384	1, 034	470	957	1, 152	577
857	146	1, 373	87	431	364	266	372	465	263	231
4, 952	247	2, 309	342	3, 224	337	1, 403	418	1, 524	1, 357	1, 129
1, 759	111	2, 179	102	2, 129	226	579	207	492	516	326
2, 503	167	1, 897	163	1, 377	314	879	299	419	1, 160	618
1, 702	176	1, 310	127	994	976	1, 197	453	691	584	434
7, 524	907	6, 928	917	3, 452	2, 612	3, 908	2, 142	2, 904	1, 006	1, 381
2, 461	317	1, 228	363	1, 424	748	663	1, 026	787	356	364
20, 898	430	7, 754	442	4, 826	13, 004	14, 321	12, 055	9, 901	1, 144	2, 132
12, 543	1, 649	21, 711	1, 540	17, 607	4, 176	8, 330	3, 730	8, 397	2, 123	2, 157
1, 024	124	1, 038	97	200	119	127	116	137	182	99
12, 957	1, 066	5, 737	1, 093	3, 477	1, 412	3, 751	1, 402	3, 030	1, 977	2, 516
4, 548	636	3, 452	557	2, 458	1, 042	1, 905	1, 147	3, 482	1, 148	859
1, 359	186	868	165	590	430	765	470	613	419	301
913	116	680	85	269	121	172	119	112	78	229
1, 530	255	2, 586	291	997	802	726	566	410	257	308
4, 619	946	6, 167	805	3, 424	1, 110	1, 317	966	2, 170	646	948
2, 051	330	2, 214	369	1, 318	580	1, 991	580	1, 453	366	466
5, 833	548	4, 533	729	5, 878	756	1, 538	912	2, 111	1, 935	1, 538
4, 619	486	4, 138	520	3, 452	847	1, 093	877	1, 440	1, 233	1, 266
15, 458	1, 461	14, 238	1, 919	13, 944	3, 649	7, 825	3, 813	5, 520	2, 274	2, 434
1, 674	189	1, 702	166	1, 624	363	1, 370	385	1, 200	391	275
748	182	1, 269	170	167	2, 161	730	2, 106	576	119	185
1, 147	98	593	85	941	135	400	176	493	164	165
1, 819	57	677	60	1, 662	72	270	72	232	35	355
2, 496	380	1, 451	343	1, 085	588	1, 028	721	2, 168	433	578
2, 578	94	3, 530	47	812	441	1, 051	435	847	172	448
183	95	441	133	878	495	373	571	580	39	44
671	60	1, 982	33	147	667	800	767	810	285	118
225	67	568	40	155	831	555	824	823	60	36
34, 320	895	17, 862	446	17, 346	3, 972	13, 258	4, 221	13, 833	5, 321	5, 611
7, 593	455	5, 481	401	5, 098	3, 860	5, 571	4, 023	5, 513	1, 760	1, 386

BUILDING CONSTRUCTION IN CITIES



TABLE 29.—Building construction authorized in cities with 1940 population of 50,000 or more, 1946 and 1947<sup>1</sup>—Continued

State and city	Population in 1940	All building construction				New residential building <sup>2</sup>				New nonresidential building				Additions, alterations, and repairs				Number of new dwelling units	
		1947		1946		1947		1946		1947		1946		1947		1946		1947	1946
		Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)	Number of buildings	Valuation (in thousands)		
Pennsylvania—Continued																			
Reading	110,568	2,168	\$2,645	2,386	\$2,776	28	\$181	84	\$592	72	\$1,289	34	\$881	2,068	\$1,175	2,268	\$1,303	29	101
Scranton	140,404	896	3,253	888	2,417	22	145	17	87	157	1,522	145	1,292	717	1,586	726	1,038	27	25
Upper Darby Township	56,883	859	4,803	885	4,179	521	3,702	549	3,104	79	752	73	452	259	349	263	623	601	570
Wilkes-Barre	86,236	1,623	3,648	1,109	1,154	12	368	0	0	12	766	0	0	1,599	2,514	1,109	1,154	97	0
York	56,712	1,687	3,205	1,569	2,221	113	773	174	953	98	879	104	323	1,476	1,553	1,291	945	115	176
Rhode Island:																			
Pawtucket	75,797	950	5,505	714	2,561	434	2,863	273	1,594	164	2,021	133	302	352	621	308	665	435	273
Providence	253,504	2,230	8,636	2,464	12,529	159	1,094	176	814	289	4,064	249	9,069	1,782	3,478	2,039	2,646	178	197
South Carolina:																			
Charleston	71,275	1,259	1,809	1,370	1,546	49	214	44	117	206	697	183	644	1,004	898	1,143	785	60	44
Columbia	62,396	799	5,542	916	3,328	353	2,427	534	1,860	199	2,691	151	1,189	247	424	231	279	577	565
Tennessee:																			
Chattanooga	128,163	3,016	6,782	3,228	4,923	517	1,550	572	1,533	363	2,883	383	1,810	2,136	2,349	2,273	1,580	513	580
Knoxville	111,580	1,999	10,656	2,592	13,383	735	3,793	1,262	4,627	453	4,652	458	5,975	811	2,211	872	2,781	812	1,272
Memphis	292,942	7,781	27,047	7,521	22,581	2,560	16,134	2,335	10,420	2,291	7,111	1,777	9,309	2,930	3,202	3,409	2,852	3,440	2,488
Nashville	167,402	1,878	6,798	1,836	7,959	438	1,977	608	3,009	312	3,133	322	2,875	1,128	1,688	846	2,075	522	701
Texas:																			
Amarillo	51,686	2,106	9,111	2,422	7,566	1,144	5,635	1,193	4,423	168	2,420	303	1,696	794	1,002	926	1,447	1,152	1,193
Austin	87,930	4,334	20,608	5,660	19,033	2,134	15,041	3,284	14,879	1,098	3,995	1,237	2,985	1,102	1,572	1,139	1,169	2,234	3,789
Beaumont	59,061	3,074	6,708	2,434	3,798	799	2,651	679	2,129	360	2,986	347	873	1,915	1,071	1,408	796	800	663
Corpus Christi	57,301	3,714	14,612	2,902	9,873	1,416	8,401	1,090	5,232	801	4,216	666	3,258	1,497	1,995	1,146	1,383	1,705	1,156
Dallas	294,734	15,584	53,082	13,419	44,628	5,759	30,898	5,301	23,256	1,716	12,633	1,972	13,317	8,109	9,551	6,146	8,055	7,736	5,546
El Paso	96,810	1,455	7,870	1,504	5,325	550	2,593	687	2,338	246	4,179	240	2,031	659	1,098	577	906	566	707
Fort Worth	177,662	7,275	27,897	6,978	24,227	3,983	18,055	4,068	15,488	1,465	7,701	1,284	6,275	1,827	2,141	1,626	2,464	4,493	4,234
Galveston	60,862	1,158	2,472	1,336	2,939	164	665	176	819	184	975	251	1,201	810	832	909	919	206	261
Houston	384,514	8,716	72,631	9,120	53,899	4,507	32,959	5,119	26,085	1,625	31,969	1,897	22,234	2,584	7,703	2,104	5,580	5,881	5,709
San Antonio	253,854	14,479	30,203	13,827	25,654	5,115	19,280	3,682	13,783	1,238	5,685	1,127	5,720	8,126	5,238	9,018	6,151	5,222	3,788
Waco	55,982	1,649	8,731	1,648	5,016	816	4,636	970	2,637	300	2,569	308	1,724	533	1,526	370	655	853	933
Utah:																			
Salt Lake City	149,934	2,644	11,368	3,003	14,067	978	6,640	1,462	7,708	557	2,778	524	3,071	1,109	1,950	1,017	3,278	1,146	1,709
Virginia:																			
Arlington County	57,040	2,203	24,709	2,057	14,023	1,042	20,618	978	10,603	207	2,030	187	2,313	954	2,061	892	1,107	2,611	1,458
Norfolk	144,332	2,035	16,402	1,729	5,474	835	7,397	565	1,672	469	6,783	494	2,384	731	2,222	670	1,418	1,419	585
Portsmouth	50,745	584	1,596	426	1,588	324	795	61	164	91	307	119	857	169	494	246	567	324	61
Richmond	193,042	4,139	16,611	4,373	18,266	819	8,144	1,325	9,498	455	4,882	356	4,370	2,865	3,585	2,692	4,398	1,722	1,799
Roanoke	69,287	1,270	7,504	1,468	5,982	274	3,162	548	3,034	161	2,832	218	2,068	841	1,510	702	880	455	565
Washington:																			
Seattle	368,302	7,383	40,435	7,908	41,807	2,310	23,303	3,244	19,706	1,566	9,352	1,440	14,178	3,507	7,780	3,224	7,923	3,346	3,364
Spokane	122,001	4,675	18,597	5,030	14,181	1,587	11,167	1,596	19,649	1,490	4,681	1,540	3,013	1,598	2,799	1,894	1,519	1,731	1,623
Tacoma	109,408	2,803	11,570	3,621	11,273	736	5,041	1,047	6,456	694	4,509	750	3,013	1,373	2,020	1,824	1,804	753	1,073
West Virginia:																			
Charleston	67,914	1,802	6,650	1,724	3,403	320	2,327	212	1,466	261	3,565	105	902	1,221	758	1,317	1,035	402	238
Huntington	78,836	1,560	4,965	1,399	4,095	517	2,519	702	2,679	299	1,469	241	765	744	977	456	651	584	740
Wheeling	61,099	1,486	3,267	1458	2,389	46	356	42	275	94	1,614	64	1,067	1,346	1,352	1,047	46	42	
Wisconsin:																			
Madison	67,447	2,053	5,354	1,914	6,183	394	3,311	349	2,069	225	1,198	210	2,410	1,434	1,025	1,355	1,694	625	399
Milwaukee	587,472	6,829	31,614	8,076	36,263	1,422	13,812	2,390	14,636	1,362	10,839	1,210	15,431	4,045	6,963	4,470	6,196	1,733	2,733
Racine	67,195	1,255	6,563	922	3,206	336	2,485	271	1,789	220	3,033	176	588	699	1,045	475	829	343	274

<sup>1</sup> These data cover building only in urban places, excluding the suburban areas surrounding the city proper. They do not represent the volume of building actually started, but the volume authorized, principally by building permits issued and Federal contracts awarded. The building permit data have not been adjusted for lapsed permits nor for lag between permit issuance and the start of construction. Urban classification is based on the 1940 census. Figures for building construction authorized in cities with 1940 population of less than 50,000 are published separately, and are obtainable from the Bureau of Labor Statistics.

<sup>2</sup> Includes valuation of hotels, dormitories, tourist cabins, and other nonhousekeeping building, in addition to the valuation of housekeeping units shown in the last 2 columns. Data on the number of residential buildings should be differentiated from the figures on the number of new dwelling units, since a building may contain more than one dwelling unit.

<sup>3</sup> Data not available for residential and nonresidential separately.

<sup>4</sup> Based on applications filed rather than permits issued.

<sup>5</sup> Based on inspection records and represent work actually started.

## Appendix.—Supplementary Tables

### Value of Federal Construction Contract Awards

**TABLE A-1.—Value of contracts awarded and force-account work started on federally financed new construction, by type of construction, 1935-47<sup>1</sup>**

Type of construction	Value (in millions)												
	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	1937	1936	1935
Total new construction <sup>2</sup> .....	\$1,294	\$1,450	\$902	\$1,293	\$2,507	\$7,775	\$5,932	\$2,316	\$1,587	\$1,609	\$990	\$1,533	\$1,478
Airport <sup>3</sup> .....	25	15	41	111	243	579	499	137	5	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Building.....	276	549	617	875	1,098	6,130	4,422	1,538	669	677	344	561	443
Residential.....	51	435	53	101	375	549	322	245	231	\$ 32	\$ 17	\$ 63	\$ 8
Nonresidential.....	225	114	564	774	1,323	5,581	4,100	1,293	438	645	327	498	435
Conservation and development.....	308	300	72	113	156	218	200	193	225	304	133	190	439
Reclamation.....	77	169	31	67	101	151	42	69	115	175	59	74	158
River, harbor, and flood control.....	231	131	41	46	55	67	158	129	110	129	74	116	281
Electrification <sup>5</sup> .....	8	5	5	4	12	33	4	18	30	24	7	15	5
Highway.....	657	536	101	112	162	348	447	364	356	372	360	512	381
Water supply and sewage disposal.....	8	13	23	31	38	152	24	16	118	116	76	155	136
All other types <sup>7</sup> .....	12	32	43	52	198	315	336	45	184	116	70	100	74

<sup>1</sup> Excludes projects classified as "secret" by the military, and all construction for the Atomic Energy Commission. Data for Federal aid programs cover amounts contributed by both the owner and the Federal Government. Force-account work is done, not through a contractor, but directly by a business or government agency, using a separate work force to perform non-maintenance construction on the agency's own properties.

<sup>2</sup> Includes major additions and alterations.

<sup>3</sup> Excludes hangars and other buildings, which are included under building construction.

<sup>4</sup> Included in "All other types".

<sup>5</sup> Nonresidential construction at the site of 3 Resettlement Administration projects, for which a break-down of residential and nonresidential costs is not available, is included in the residential totals.

<sup>6</sup> Excludes loans granted by the Rural Electrification Administration, which were included in this series in publications issued prior to August 1947.

<sup>7</sup> Covers forestry, railroad, and other types of construction projects not elsewhere classified.

**TABLE A-2.—Value of contracts awarded and force-account work started on federally financed new construction, by region and State, 1943-47<sup>1</sup>**

Region and State	1947		1946		1945		1944		1943	
	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total
United States, total.....	\$1,294,067	100.0	\$1,450,252	100.0	\$902,265	100.0	\$1,297,602	100.0	\$2,506,786	100.0
New England.....	31,398	2.4	61,264	4.2	22,735	2.5	31,457	2.4	101,601	4.1
Connecticut.....	6,592	.6	15,051	1.0	5,993	.7	4,917	.4	20,674	.8
Maine.....	4,650	.4	4,701	.3	587	.1	6,756	.5	17,022	.7
Massachusetts.....	10,877	.8	27,820	1.9	14,255	1.6	11,446	.9	36,108	1.4
New Hampshire.....	2,878	.2	3,782	.3	321	.0	2,261	.2	2,310	.1
Rhode Island.....	3,641	.3	6,720	.5	1,410	.1	5,772	.4	24,258	1.0
Vermont.....	2,960	.2	3,190	.2	166	.0	305	.0	1,229	.1
Middle Atlantic.....	187,796	14.5	201,728	13.9	109,846	12.2	144,101	11.1	296,368	11.8
New Jersey.....	23,693	1.8	37,035	2.5	36,777	4.1	22,663	1.8	59,665	2.4
New York.....	100,002	7.7	101,559	7.0	31,122	3.4	44,484	3.4	111,838	4.4
Pennsylvania.....	64,101	5.0	63,134	4.4	41,947	4.7	76,954	5.9	124,865	5.0
East North Central.....	154,455	11.9	169,710	11.7	86,402	9.6	134,951	10.4	373,273	14.9
Illinois.....	54,421	4.2	38,460	2.7	29,300	3.3	39,831	3.1	121,754	4.8
Indiana.....	17,466	1.3	26,314	1.8	19,800	2.2	17,987	1.4	18,074	.7
Michigan.....	25,823	2.0	36,749	2.5	12,509	1.4	32,754	2.5	102,384	4.1
Ohio.....	33,743	2.6	47,246	3.3	16,313	1.8	38,302	2.9	116,649	4.7
Wisconsin.....	23,002	1.8	20,941	1.4	8,480	.9	6,077	.5	14,412	.6
West North Central.....	161,039	12.4	154,317	10.6	98,943	11.0	57,511	4.4	102,564	4.1
Iowa.....	17,359	1.3	27,148	1.9	5,125	.6	6,763	.5	7,383	.3
Kansas.....	22,486	1.7	24,293	1.7	10,465	1.2	12,312	.9	13,833	.6
Minnesota.....	24,127	1.9	25,353	1.7	3,357	.4	4,019	.3	31,025	1.2
Missouri.....	31,047	2.4	34,758	2.4	52,232	5.8	16,846	1.3	30,699	1.2
Nebraska.....	18,392	1.4	18,776	1.3	21,688	2.4	13,074	1.0	16,977	.7
North Dakota.....	27,459	2.1	7,325	.5	4,945	.5	3,434	.3	245	.0
South Dakota.....	20,169	1.6	16,664	1.1	1,131	.1	1,063	.1	2,402	.1
South Atlantic.....	191,296	14.8	181,916	12.5	127,561	14.1	225,404	17.4	464,507	18.5
Delaware.....	2,990	.2	1,784	.1	1,909	.2	1,395	.1	6,173	.2
District of Columbia.....	15,216	1.2	11,627	.8	11,800	1.3	11,806	.9	14,355	.6
Florida.....	24,433	1.9	20,434	1.4	20,419	2.3	42,359	3.3	145,774	5.8
Georgia.....	30,509	2.4	39,271	2.7	9,015	1.0	17,925	1.4	36,243	1.4

See footnotes at end of table.

TABLE A-2.—Value of contracts awarded and force-account work started on federally financed new construction, by region and State, 1943-47—Continued

Region and State	1947		1946		1945		1944		1943	
	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total	Value (in thousands)	Percent of total
<b>South Atlantic—Continued</b>										
Maryland.....	\$15,927	1.2	\$18,162	1.3	\$26,256	2.9	\$32,426	2.5	\$67,701	2.7
North Carolina.....	25,749	2.0	31,173	2.1	18,419	2.0	43,024	3.3	83,856	3.3
South Carolina.....	31,266	2.4	24,415	1.7	4,541	.5	10,274	.8	24,856	1.0
Virginia.....	32,301	2.5	24,555	1.7	28,578	3.2	53,985	4.1	78,997	3.2
West Virginia.....	12,905	1.0	10,496	.7	6,624	.7	12,510	1.0	6,552	.3
<b>East South Central</b>										
Alabama.....	111,094	8.6	117,117	8.1	68,117	7.5	84,326	6.5	188,943	7.5
Kentucky.....	13,127	1.0	22,468	1.6	24,464	2.7	19,046	1.4	39,594	1.6
Mississippi.....	21,577	1.7	24,623	1.7	13,077	1.4	24,329	1.9	46,769	1.8
Tennessee.....	38,702	3.0	17,812	1.2	11,921	1.3	10,178	.8	24,105	1.0
	37,688	2.9	52,214	3.6	18,655	2.1	31,773	2.4	78,475	3.1
<b>West South Central</b>										
Arkansas.....	196,857	15.3	170,741	11.8	117,925	13.1	197,382	15.2	358,300	14.3
Louisiana.....	63,158	4.9	39,129	2.7	17,926	2.0	85,068	6.6	56,697	2.3
Oklahoma.....	30,919	2.4	17,655	1.2	15,133	1.7	34,259	2.6	80,785	3.2
Texas.....	16,231	1.3	40,832	2.8	20,046	2.2	19,251	1.0	30,670	1.2
	86,549	6.7	73,025	5.1	64,770	7.2	64,774	5.0	190,148	7.6
<b>Mountain</b>										
Arizona.....	105,630	8.2	137,444	9.5	41,442	4.6	74,815	5.8	209,940	8.4
Colorado.....	9,734	.8	22,242	1.5	2,550	.3	14,047	1.1	25,474	1.0
Idaho.....	33,628	2.6	29,830	2.1	1,590	.2	3,002	.2	7,772	.3
Montana.....	9,332	.7	14,003	1.0	1,564	.2	4,314	.3	21,232	.8
Nevada.....	8,533	.7	17,438	1.2	3,336	.4	5,237	.3	1,537	.1
New Mexico.....	3,999	.3	17,169	1.2	13,110	1.4	5,289	.4	49,015	2.0
Utah.....	10,773	.8	13,610	.9	10,890	1.2	8,426	.7	17,751	.7
Wyoming.....	8,257	.6	7,628	.5	4,273	.5	32,109	2.5	82,813	3.3
	21,294	1.7	15,524	1.1	4,129	.4	4,891	.3	4,346	.2
<b>Pacific</b>										
California.....	154,502	11.9	256,015	17.7	229,294	25.4	347,655	26.8	411,290	16.4
Oregon.....	95,347	7.4	180,248	11.1	180,786	20.0	285,541	22.0	265,819	10.6
Washington.....	32,406	2.5	28,782	2.0	13,278	1.5	21,375	1.7	33,345	1.3
	26,749	2.0	66,985	4.6	35,230	3.9	40,739	3.1	112,326	4.5

<sup>1</sup> Excludes projects classified as "secret" by the military, and all construction for the Atomic Energy Commission. Also excludes loans granted by the Rural Electrification Administration, which were included in this series in publications issued prior to August 1947. Data for Federal-aid programs cover amounts contributed by both the owner and the Federal Government. Major additions and alterations are included.

Force-account work is done, not through a contractor, but directly by a business or government agency using a separate work force to perform non-maintenance construction on the agency's own properties.

## Statistics Relating to Construction Costs

TABLE A-3.—Composite index of principal components of construction costs for new private building, 1934-47<sup>1</sup>

Year	Index numbers (average 1935-1939=100)		
	Composite of earnings and prices	Average hourly earnings on private building	Wholesale prices of building materials
1934.....	94.1	90.8	96.2
1935.....	94.4	93.0	95.2
1936.....	95.8	94.1	96.8
1937.....	105.0	103.1	106.3
1938.....	101.9	103.7	100.8
1939.....	103.1	106.4	101.0
1940.....	107.2	109.4	105.8
1941.....	115.2	115.3	115.2
1942.....	126.1	131.1	123.0
1943.....	131.6	142.9	124.3
1944.....	137.3	150.6	128.9
1945.....	141.5	157.4	131.5
1946.....	156.0	168.7	148.0
1947.....	197.1	191.9	200.3

<sup>1</sup> Based on average hourly earnings in private building construction and wholesale prices of building materials. In 1939, labor constituted 38.6 percent and material 61.4 percent of the composite average. Changes in construction costs resulting from variations in the efficiency of labor and management, in competitive markets, in black market operations, and in overhead costs are not reflected in this index.

TABLE A-4.—Average weekly hours and average weekly and hourly earnings on private building construction, and index numbers, 1934-47<sup>1</sup>

Year	Average			Index numbers (average 1935-39=100)		
	Hours worked per week	Weekly earnings <sup>2</sup>	Hourly earnings	Hours worked per week	Weekly earnings	Hourly earnings
1934.....	28.9	\$22.97	\$0.795	89.8	81.3	90.8
1935.....	30.1	24.51	.815	93.5	86.8	93.0
1936.....	32.8	27.01	.824	101.9	95.6	94.1
1937.....	33.4	30.14	.903	103.7	106.7	103.1
1938.....	32.1	29.19	.908	99.7	103.3	103.7
1939.....	32.6	30.39	.932	101.2	107.6	106.4
1940.....	33.1	31.70	.958	102.8	112.2	109.4
1941.....	34.8	35.14	1.010	108.1	124.4	115.3
1942.....	36.4	41.80	1.148	113.0	148.0	131.1
1943.....	38.4	48.13	1.262	119.3	170.4	142.9
1944.....	39.6	52.19	1.319	123.0	184.7	150.6
1945.....	39.0	53.73	1.379	121.1	190.2	157.4
1946.....	38.1	56.24	1.478	118.3	199.1	168.7
1947.....	37.6	63.30	1.681	116.8	224.1	191.9

<sup>1</sup> The data cover all employees of contract construction firms working at the site of privately financed projects (skilled, semiskilled, unskilled, superintendents, time clerks, etc.). Employees of construction firms employed on publicly financed projects and off-site work are excluded.

The averages are based on reports submitted monthly to the Bureau of Labor Statistics by over 11,000 firms whose major activity is construction. The reports provide data on the number of employees, their total gross earnings, and total hours of work (straight time and overtime combined) during the pay-roll period ending nearest the 15th of the month.

<sup>2</sup> Hourly earnings when multiplied by weekly hours of work may not exactly equal weekly earnings because of rounding.

TABLE A-5.—Average weekly hours and average weekly and hourly earnings on private building construction, by type of employing contractor, monthly, 1946-47<sup>1</sup>

Period	Average hours and earnings of all site workers employed by—										
	All types of building contractors	General building contractors	Special trades contractors								
			All	Plumbing, heating, and air conditioning	Painting and decorating	Electrical	Masonry	Plastering and lathing	Carpentering	Roofing and sheetmetal	Excavating, grading, and foundation
	Average hours worked per week										
1946, annual average	38.1	37.6	38.6	39.6	37.5	40.7	37.2	36.8	39.0	37.1	37.5
January	37.7	36.8	38.5	40.4	37.9	40.8	32.9	35.0	38.1	36.4	35.6
February	37.3	36.8	37.8	40.0	37.1	40.9	33.8	34.9	38.7	35.7	35.2
March	37.5	37.0	38.0	38.9	37.8	40.3	36.6	35.0	39.3	36.5	36.9
April	38.2	37.8	38.6	39.2	37.7	40.4	37.0	34.9	40.0	37.5	39.0
May	37.5	36.7	38.4	39.6	37.9	40.3	37.0	35.9	38.9	36.7	37.6
June	38.2	37.9	38.7	39.2	38.1	41.1	37.7	37.8	39.2	37.4	38.6
July	38.2	37.7	38.8	39.4	37.6	40.9	38.7	37.2	39.1	38.1	38.8
August	38.2	37.8	38.7	39.5	37.8	40.3	38.6	37.7	39.4	37.7	38.3
September	38.7	38.4	39.2	40.2	38.6	41.1	38.1	38.3	39.8	38.3	38.4
October	38.8	38.5	39.1	40.1	38.4	40.8	38.0	38.5	39.1	37.5	37.9
November	37.2	36.8	37.7	38.6	35.2	39.8	37.4	35.3	38.3	36.1	36.4
December	38.4	38.0	40.0	40.8	36.9	41.4	37.5	38.7	38.2	36.4	37.9
1947, annual average	37.6	37.0	38.4	39.2	36.7	40.3	36.4	37.5	38.5	36.7	37.8
January	37.6	37.2	38.1	39.9	35.9	40.2	34.9	37.9	37.7	34.9	36.3
February	36.9	36.2	37.6	39.3	36.3	40.8	32.4	36.3	37.8	34.1	37.2
March	38.0	37.9	38.2	39.2	37.1	40.5	35.1	37.9	39.6	35.8	37.7
April	37.1	36.4	38.0	38.7	36.6	40.5	34.6	38.2	37.9	36.0	36.5
May	37.6	36.8	38.5	38.7	37.3	40.4	37.2	38.9	38.9	37.2	38.5
June	37.8	36.9	38.7	38.9	37.4	40.6	37.2	38.2	38.3	37.6	37.9
July	38.0	37.6	38.4	38.7	36.9	39.7	37.3	37.5	37.7	37.2	38.1
August	38.2	38.0	38.5	38.9	37.4	39.3	38.2	38.0	39.5	37.4	39.1
September	37.9	37.2	38.9	39.1	37.4	40.3	38.1	38.1	39.0	37.9	39.8
October	38.1	37.4	38.9	39.2	37.6	40.8	37.7	37.4	38.9	38.4	38.8
November	36.6	35.8	37.5	38.4	35.0	39.9	36.0	35.3	38.4	35.4	36.7
December	37.9	37.1	38.9	40.6	36.0	40.6	36.3	36.5	37.8	37.1	37.8
	Average weekly earnings <sup>1</sup>										
1946, annual average	\$56.24	\$53.33	\$59.52	\$60.92	\$58.66	\$68.44	\$55.42	\$62.04	\$50.60	\$51.29	\$51.57
January	52.89	49.53	55.57	55.93	56.43	65.12	47.70	55.31	53.95	49.57	47.06
February	53.04	50.80	55.37	56.92	55.16	65.28	48.91	55.81	53.37	48.45	45.97
March	52.87	50.40	55.58	55.65	56.81	65.25	51.91	56.32	54.44	48.70	48.70
April	54.29	51.73	57.16	58.25	56.92	66.30	53.43	55.96	54.18	49.61	52.41
May	53.63	50.43	57.31	58.92	57.09	66.50	53.08	58.65	54.78	48.61	50.50
June	55.23	52.39	58.64	59.07	58.86	67.51	54.72	51.89	55.93	50.53	52.46
July	56.25	53.01	60.09	60.92	58.81	65.94	57.33	61.75	57.07	53.11	55.28
August	56.67	53.66	60.34	61.43	59.75	67.53	58.36	64.60	56.82	53.30	54.21
September	58.49	55.64	61.37	63.70	62.06	69.66	58.53	65.21	58.68	54.06	54.88
October	59.20	56.39	62.39	63.89	62.16	70.59	58.70	66.43	59.95	54.33	51.55
November	57.65	54.68	61.11	62.62	57.39	69.63	57.56	63.13	57.64	50.95	52.10
December	60.32	56.73	64.53	67.44	61.05	74.76	58.36	71.04	57.85	52.84	54.94
1947, annual average	63.30	59.39	67.97	69.68	63.37	77.78	62.39	73.15	62.33	57.81	60.12
January	59.97	56.49	64.00	67.16	58.33	73.85	56.49	69.81	58.20	51.49	53.98
February	58.92	54.91	63.65	66.65	58.75	74.95	52.41	66.84	57.69	50.59	55.00
March	61.23	58.02	64.92	66.89	60.10	75.75	57.37	69.15	62.98	53.67	58.36
April	60.57	56.38	65.43	67.37	60.87	76.31	57.36	72.40	61.01	54.02	56.07
May	62.26	57.95	67.15	68.24	63.77	76.73	62.01	74.95	62.67	57.43	59.70
June	62.71	58.55	67.69	67.73	63.52	77.81	63.54	73.67	62.29	58.13	60.48
July	63.60	60.08	67.99	68.63	63.52	77.17	63.26	73.14	61.97	59.58	60.33
August	64.71	61.33	69.01	69.60	66.32	76.96	65.89	75.61	65.99	60.86	63.12
September	65.36	61.16	70.61	71.19	66.13	79.92	66.68	76.05	65.75	63.27	64.27
October	66.36	62.25	71.32	71.98	67.29	81.87	67.19	75.60	66.55	62.48	63.51
November	64.55	60.55	69.36	71.90	63.56	79.64	65.39	73.27	66.50	57.76	60.08
December	67.31	62.86	72.64	76.61	65.33	81.20	66.69	76.63	64.94	60.64	63.33

See footnotes at end of table.

TABLE A-5.—Average weekly hours and average weekly and hourly earnings on private building construction, by type of employing contractor, monthly, 1946-47<sup>1</sup>—Continued

Period	Average hours and earnings of all site workers employed by—										
	All types of building contractors	General building contractors	Special trades contractors								
			All	Plumbing, heating, and air conditioning	Painting and decorating	Electrical	Masonry	Plastering and lathing	Carpentering	Roofing and sheetmetal	Excavating, grading, and foundation
	Average hourly earnings										
1946, annual average.....	\$1.478	\$1.419	\$1.544	\$1.537	\$1.564	\$1.683	\$1.490	\$1.638	\$1.426	\$1.383	\$1.375
January.....	1.402	1.355	1.444	1.384	1.491	1.595	1.450	1.579	1.418	1.361	1.322
February.....	1.422	1.379	1.465	1.423	1.487	1.596	1.448	1.601	1.379	1.356	1.306
March.....	1.411	1.362	1.463	1.430	1.492	1.619	1.419	1.611	1.385	1.335	1.319
April.....	1.423	1.368	1.482	1.487	1.511	1.640	1.443	1.604	1.355	1.325	1.345
May.....	1.431	1.374	1.493	1.489	1.506	1.651	1.434	1.632	1.407	1.325	1.342
June.....	1.444	1.384	1.515	1.508	1.545	1.643	1.453	1.639	1.425	1.350	1.361
July.....	1.473	1.408	1.547	1.548	1.565	1.661	1.484	1.659	1.458	1.393	1.423
August.....	1.482	1.419	1.558	1.555	1.581	1.678	1.510	1.716	1.442	1.414	1.416
September.....	1.510	1.450	1.580	1.584	1.609	1.696	1.537	1.703	1.473	1.412	1.431
October.....	1.526	1.463	1.596	1.593	1.620	1.732	1.544	1.727	1.531	1.448	1.369
November.....	1.549	1.485	1.622	1.620	1.629	1.750	1.541	1.788	1.504	1.413	1.431
December.....	1.569	1.495	1.655	1.655	1.653	1.808	1.556	1.837	1.513	1.450	1.450
1947, annual average.....	1.681	1.603	1.772	1.779	1.724	1.930	1.716	1.951	1.645	1.577	1.590
January.....	1.594	1.518	1.680	1.681	1.637	1.838	1.618	1.842	1.544	1.477	1.487
February.....	1.598	1.516	1.691	1.694	1.619	1.836	1.619	1.840	1.528	1.483	1.477
March.....	1.610	1.531	1.699	1.705	1.619	1.872	1.637	1.822	1.591	1.497	1.560
April.....	1.632	1.550	1.723	1.739	1.662	1.885	1.656	1.894	1.611	1.499	1.537
May.....	1.655	1.575	1.745	1.761	1.712	1.899	1.688	1.926	1.612	1.542	1.552
June.....	1.661	1.585	1.749	1.739	1.697	1.917	1.706	1.927	1.625	1.547	1.594
July.....	1.676	1.596	1.772	1.774	1.722	1.946	1.697	1.950	1.645	1.602	1.583
August.....	1.694	1.614	1.794	1.791	1.774	1.960	1.727	1.992	1.670	1.629	1.616
September.....	1.723	1.646	1.816	1.819	1.767	1.985	1.752	1.995	1.684	1.669	1.613
October.....	1.743	1.665	1.833	1.836	1.792	2.006	1.781	2.019	1.710	1.626	1.638
November.....	1.765	1.690	1.851	1.872	1.818	1.995	1.817	2.075	1.733	1.631	1.636
December.....	1.774	1.695	1.865	1.887	1.812	2.000	1.836	2.100	1.718	1.634	1.676

<sup>1</sup> The data cover all employees of contract construction firms working at the site of privately financed projects (skilled, semiskilled, unskilled, superintendents, time clerks, etc.). Employees of construction firms employed on publicly financed projects and off-site work are excluded.

The averages are based on reports submitted monthly to the Bureau of Labor Statistics by over 11,000 firms whose major activity is construction.

The reports provide data on the number of employees, their total gross earnings, and total hours of work (straight time and overtime combined) during the pay-roll period ending nearest the 15th of the month.

<sup>2</sup> Hourly earnings when multiplied by weekly hours of work may not exactly equal weekly earnings because of rounding.

TABLE A-6.—Average weekly hours and average weekly and hourly earnings on Federal construction, by type of construction, 1946-47<sup>1</sup>

Type of construction	Average hours worked per week			Average weekly earnings <sup>2</sup>			Average hourly earnings		
	1947	1946	Percent change	1947	1946	Percent change	1947	1946	Percent change
All types.....	36.6	37.0	-1.1	\$49.88	\$57.62	+4.7	\$1.363	\$1.286	+6.0
Residential.....	33.0	34.8	-5.2	49.42	48.64	+1.6	1.496	1.397	+7.1
Nonresidential.....	30.1	34.3	-12.2	46.30	45.21	+2.4	1.538	1.320	+16.5
Highways.....	37.6	39.0	-3.6	48.72	47.57	+2.4	1.294	1.221	+6.0
Conservation and development.....	41.2	41.4	-0.5	53.87	48.91	+10.1	1.306	1.182	+10.5
Reclamation.....	39.1	35.4	+11.8	57.94	50.97	+13.7	1.482	1.328	+11.6
River, harbor, and flood control.....	42.5	42.6	-0.2	51.50	48.11	+7.0	1.212	1.180	+7.3
All other.....	34.5	34.5	0	49.09	44.32	+10.8	1.423	1.284	+10.8

<sup>1</sup> Computed on an annual average basis by dividing reported annual pay rolls and number of man-hours worked during the year by 52. This method is used primarily because hours and earnings on Federal construction projects are reported by accounting months, rather than by calendar months. Thus all contractors do not report for uniform pay periods during any given month; some may include data for 4 weeks and others for 5. In addition, averages in a given month are affected substantially by shifts in the geographic distribution of projects under way, especially when the number of projects in a

category is small. Consequently, average hours and earnings cannot be computed accurately on a current weekly basis. Most of the bias resulting from both the reporting procedures and the project location, however, is removed when data for the year as a whole are used to obtain averages. Reports are received monthly from agencies carrying on most Federal construction work and, for some work, directly from the construction contractors.

<sup>2</sup> Hourly earnings when multiplied by weekly hours of work may not exactly equal weekly earnings because of rounding.

TABLE A-7.—Average construction cost for new privately financed 1-family dwelling units started, 1940-47<sup>1</sup>

Period	Average construction cost
1940.....	\$4,065
1941.....	4,249
1942.....	3,894
1943.....	3,674
1944.....	3,439
1945.....	4,654
1946.....	5,520
First quarter.....	5,672
Second quarter.....	5,489
Third quarter.....	5,425
Fourth quarter.....	5,631
1947.....	6,750
First quarter.....	5,925
Second quarter.....	6,327
Third quarter.....	6,904
Fourth quarter.....	7,610

<sup>1</sup> These data represent the average cost of all the 1-family dwelling units started nationally. They do not show change in the cost of building a single type of dwelling.

The figures are based primarily on builders' estimates of construction cost as recorded on building permits and for 1946, and 1947 on reports of construction cost by individual construction contractors in a representative group of localities that do not issue permits. The building permit information has been adjusted for understatement of costs on permit applications, using the data from periodic field investigation of a large sample of building permits.

Construction costs exclude sales profit, selling costs, the cost of land and site improvements, and all such nonconstruction expenses as architectural and engineering fees. They cover only the cost of labor, materials, and subcontracted work, and that part of the builder's overhead and profit chargeable directly to the construction project. Thus, construction cost should not be confused with selling price.

TABLE A-8.—Percentage distribution of nonfarm 1-family houses started in the second quarter of 1947, by construction cost class, by type of area, and by region<sup>1</sup>

Construction cost class	Percentage distribution of nonfarm 1-family houses started in—					
	Total United States	Industrial areas <sup>2</sup>	Non-industrial areas	North <sup>3</sup>	South <sup>4</sup>	West <sup>5</sup>
All classes.....	100	100	100	100	100	100
Under \$3,250.....	20	12	28	18	21	20
\$3,250-\$5,249.....	23	19	28	19	31	15
\$5,250-\$7,249.....	25	26	25	23	28	28
\$7,250-\$9,249.....	18	24	12	23	11	24
\$9,250 and over.....	14	19	7	17	9	13

<sup>1</sup> This construction cost information is based on reports from individual construction contractors over the country who provided cost figures for a large and representative sample of projects at or near completion. Builders' costs exclude sales profit, selling costs, the cost of land and site improvements, and all such nonconstruction expenses as architectural and engineering fees. They cover only the cost of labor, materials, and subcontracted work, and that part of the builder's overhead and profit chargeable directly to the construction project. Thus, construction cost should not be confused with selling price.

<sup>2</sup> Industrial areas cover entire counties or groups of counties surrounding the central city or cities. Industrial areas cover the country's largest cities and surroundings.

<sup>3</sup> Covers the New England, Middle Atlantic, East North Central, and West North Central States and, in addition, the District of Columbia, Colorado, Idaho, Montana, Nevada, Utah, and Wyoming.

<sup>4</sup> Covers the East South Central and West South Central States, the South Atlantic States (not including the District of Columbia), and the States of Arizona, and New Mexico.

<sup>5</sup> Covers the Pacific States, i. e., California, Oregon, and Washington.

TABLE A-9.—Percentage distribution of nonfarm 1-family houses started in each of 28 industrial areas and 21 urban counties, by construction cost class, second quarter of 1947<sup>1</sup>

Area	Construction cost class				Area	Construction cost class			
	All classes	Under \$5,249	\$5,250-\$9,249	\$9,250-and over		All classes	Under \$5,249	\$5,250-\$9,249	\$9,250-and over
<b>Industrial areas:<sup>2</sup></b>					<b>Industrial areas:<sup>2</sup>—Continued</b>				
Atlanta.....	100	42	45	13	Washington, D. C.....	100	5	48	47
Boston.....	100	24	45	31	Worcester.....	100	46	47	7
Buffalo.....	100	28	55	17	<b>Urban county<sup>3</sup> and leading city</b>				
Chicago.....	100	19	52	29	in each:				
Cleveland.....	100	3	53	44	Adams, Ill. (Quincy).....	100	50	7	43
Columbus.....	100	12	74	14	Cass, N. D. (Fargo).....	100	35	47	18
Dallas.....	100	36	49	15	Chittenden, Vt. (Burlington).....	100	19	70	11
Denver.....	100	42	40	18	Dade, Fla. (Miami).....	100	22	55	23
Detroit.....	100	12	52	36	Garfield, Okla. (Enid).....	100	25	75	0
Fort Worth.....	100	58	37	5	Hancock, Maine (Ellsworth).....	100	50	50	0
Hartford.....	100	25	55	20	Ingham, Mich. (Lansing).....	100	49	51	0
Indianapolis.....	100	43	44	13	Lancaster, Pa. (Lancaster).....	100	0	100	0
Knoxville-Alcoa.....	100	82	17	1	Logan, W. Va. (Logan).....	100	85	15	0
Los Angeles.....	100	21	65	14	Maricopa, Ariz. (Phoenix).....	100	33	54	13
Memphis.....	100	63	32	5	Marion, Ohio (Marion).....	100	70	10	20
Milwaukee.....	100	13	65	22	Marquette, Mich. (Marquette).....	100	71	29	0
Minneapolis-St. Paul.....	100	14	27	59	Mobile, Ala. (Mobile).....	100	76	22	2
New York-Newark-Jersey City.....	100	7	54	39	Plymouth, Mass. (Brockton).....	100	44	49	7
Philadelphia-Camden.....	100	21	61	18	St. Lawrence, N. Y. (Ogdensburg).....	100	29	71	0
Pittsburgh.....	100	9	61	30	Sussex, N. J. (Newton).....	100	91	7	2
Sacramento.....	100	32	49	19	Tioga, N. Y. (Owego).....	100	100	0	0
San Francisco.....	100	6	71	23	Webster, Iowa (Fort Dodge).....	100	44	45	11
Springfield-Holyoke.....	100	27	60	13	Whatcom, Wash. (Bellingham).....	100	53	47	0
St. Louis.....	100	28	48	24	Wichita, Tex. (Wichita Falls).....	100	78	22	0
Syracuse.....	100	18	47	35	York, Pa. (York).....	100	50	50	0
Toledo.....	100	27	49	24					

<sup>1</sup> This construction cost information is based on reports from individual construction contractors over the country who provided cost figures for a large and representative sample of projects at or near completion. Builders' costs exclude sales profit, selling costs, the cost of land and site improvements, and all such nonconstruction expenses as architectural and engineering fees. They cover only the cost of labor, materials, and subcontracted work, and that part of the builder's overhead and profit chargeable directly to the construction project. Thus, construction cost should not be confused with selling price.

<sup>2</sup> Industrial areas cover entire counties or groups of counties surrounding the central city or cities. See table 21, footnote 1 (on p. 30) for the counties covered by each area.

<sup>3</sup> Covers the entire county.