



NEW INDUSTRIAL LOCATION IN THE NEW YORK METROPOLITAN REGION 1946 THROUGH 1950

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For many years there has been talk of industrial decentralization. Many specific instances have been cited in the New York Metropolitan Region of old plants moving from in-city sites to dispersed areas, and of new plants choosing outlying locations. It has never been demonstrated, however, whether these are isolated examples or represent a trend capable in the long run of generating a new urban pattern.

The location of industry eventually influences the location of workers' places of residence and hence of retail activities and the community facilities required for daily living. It also influences the location of traffic arteries for worker travel and for industrial trucking. It, therefore, is of major importance that trends in industrial location be studied.

Current statistics on the location of industrial employment are not an entirely satisfactory index of industry's thinking as to desirable location. Ever since the war the factory space problem has been as difficult in many respects as the residential housing problem. Many new or enlarged industrial enterprises have had to utilize old factory buildings that were vacant rather than new factory buildings built in the most favorable locations.

A more dependable guide is the location of the 2658 new plants built in the five post-war years, since their owners were free to construct them wherever they thought best, free from the influence of the national dispersal policy which had not yet become a major factor.

Accordingly, the Regional Plan Association undertook a survey to determine where industry has been making capital investment in new industrial facilities. Through the cooperation of the New Jersey and New York State Departments of Labor, the Connecticut State Development Commission and the New York City Department of Buildings, information was obtained on all factory plans approved from 1946 through 1950. (Virtually all these plans resulted in actual construction.)

The analysis of the information presented in this bulletin suggests that the present pattern of industrial location is being altered and indicates the manner in which it is changing. This information will be useful to persons estimating how much industrial decentralization the region is likely to have in the years ahead, and what effect this dispersal may have on the location of homes, services, community facilities, and transportation lines.

HIGHLIGHTS

There is mounting evidence that the century-old pattern of working "downtown" and living elsewhere is fast changing. For, many kinds of industrial activities are seeking and finding suburban location where hitherto only residential development was anticipated.

New plant construction in the period from 1946 through 1950 was:

|| Responsible for adding a total of 177 million dollars of value in 2658 new buildings;

|| Located mainly (84%) in local areas that contained little industry prior to 1946;

|| Greatest in value: in five New Jersey counties—Union (25 million dollars), Middlesex, Essex, Bergen and Hudson, with Union also leading in numbers of new plants, 277 out of the 2658;

|| Concentrated heavily between Elizabeth and Paterson, west of the Hudson and east of the Watchung Mountains;

|| Located largely outside New York City (78% by number and 92% by value);

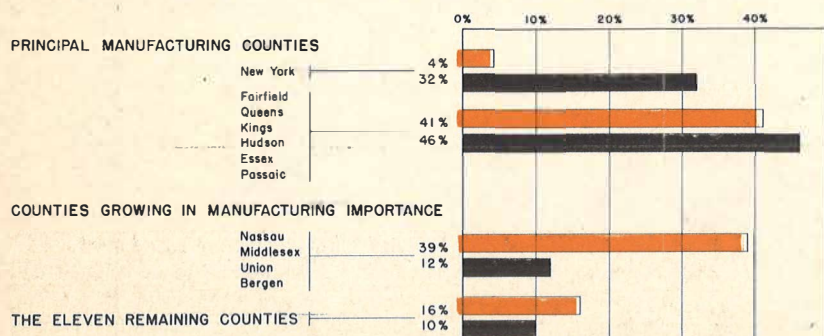
|| Limited to only 54 buildings in Manhattan (2% of the metropolitan total in numbers, 4% in value) though Kings and Queens counties combined accounted for 456 plants with a dollar value of more than 23 millions;

|| Strongly pulled toward the center of the region with half the new plants within a 15 mile radius and three-quarters within 20 miles of downtown Manhattan;

|| Uneven in emphasis from industry to industry. 31 million dollars out of the 177 million total were invested in chemical plants, less than half a million in rubber and virtually none in tobacco.

TRENDS IN NEW PLANT LOCATION FOR KEY GROUPS OF COUNTIES IN REGION

PERCENT OF REGION'S NEW FACTORY CONSTRUCTION VALUE
PERCENT OF REGION'S MANUFACTURING EMPLOYMENT, 1947



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A NEW TREND IS UNDER WAY

The best available index of the distribution of industry on the eve of the post-war construction spurt is the pattern of manufacturing employment reported in the 1947 Census of Manufactures. County percentage shares of region-wide 1947 employment have been used, therefore, as a bench mark against which to measure change.

As an index of the most recent trend, the distribution of plants built from 1946 through 1950 has been used, as indicated by the proportion of new construction value in each county.

These two percentages have been compared for each county or group of counties in the chart (P. 1), the map

(P. 3) and the table (P. 8).

It is clear that the distribution of new plants among the counties of the region differs greatly from the old industrial pattern.

As the center-fold map shows, only one-sixth of the new plants were built in the major industrialized areas existing at the beginning of the five year period.

This redistribution of industrial activities in the region, however, still is oriented basically toward the Port of New York. The central areas continue to grow, but are losing somewhat in dominance, while certain outer counties are strongly moving upward in rank.

DETAILED INFORMATION AVAILABLE

Space limitations prevent inclusion in this bulletin of much statistical data that served as a basis for the findings. These are of interest and value to persons who must analyze specific industrial location questions.

A full set of data is available in mimeographed form giving details by industrial groups, sizes of plants, counties and years. (\$5.00 per copy—\$2.50 to Association members).



INDUSTRY COMES TO THE SUBURBS

View of BERGEN COUNTY INDUSTRIAL TERMINAL

Courtesy, Alexander Summer
Industrial Service Co.

Photo by Skyviews, New York

Here in one photograph, representative of many parts of the region, is a summary of this entire bulletin. In the distant background rise the towers of mid-Manhattan, historic concentration of the region's productive activities. Part of an old ring of residential suburbs faces Manhattan across the Hudson along the Palisades, with other residential development on rising land toward the foreground.

But now, near the junction of two main highway routes and adjacent to an airport and railroad a new huge industrial district is coming into being, easily accessible to the suburban residential areas. Low, spreading buildings are surrounded by ample space for parking, for loading and for expansion. Modern, high-speed highways make the distance to the very center of the regional market a matter of minutes.

WHAT THE NEW TREND MEANS FOR THE REGION'S PLAN

In the original Regional Plan of New York City and Its Environs, published in 1929, it was proposed that more regional growth be directed into smaller outlying centers and less toward expanding the already overbig cities.

Again, four years ago the Regional Plan Association repeated the recommendation when it issued the major bulletin, **AT THE CROSSROADS**.

The desirability of a more dispersed regional pattern had received increasing attention since the first Garden City was begun in 1903 in Letchworth, England. Within our own region in the 1920's an attempt was made to build a self-contained community at Radburn, N. J. From a financial standpoint, this and many other experiments fell short, however, in large part because they failed to attract industrial activities essential if they were to become even relatively self-contained.

Against this background, the importance of the new trend in industrial location can hardly be overstated. For, as the survey reveals, much new industrial growth in the post-war

period has avoided the older centers. It finally has reached a stage which will make it feasible for communities to achieve a sound balance of working, shopping and living activities without excessive time and energy expended in daily journeying. This confirms and explains evidence of decreased commuting and increased local employment in the suburbs presented last July in Regional Plan Bulletin 77.

Taken together with the facts about suburban branch stores already reported in Bulletin 78, the present study shows that all the separate ingredients needed for a new and better regional pattern have now come into existence. People, services and industries all are prepared to find improved locations in the region, still fundamentally related to the central focus on Manhattan Island, but no longer immediately adjacent to it or to the other old central cities. This regrouping in turn will enable improved space for those activities which require central locations.

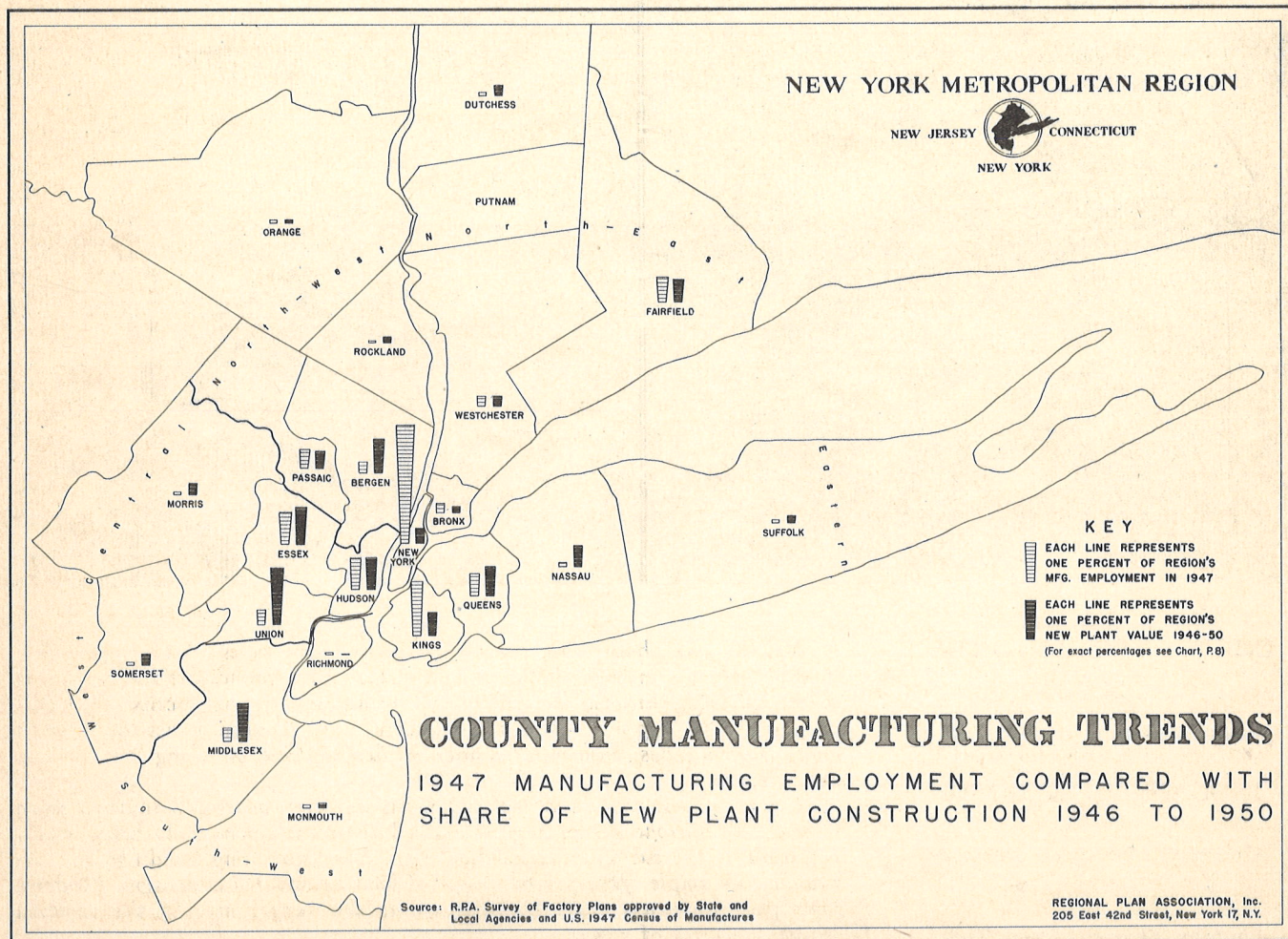
Today's opportunities call for municipal action to plan the right kind of communities and industry's insist-

ence on such planning.

The present study of plant location trends reveals a wide variation in pattern from county to county. We must therefore anticipate, perhaps to a greater extent than formerly, a great variety in community arrangement from place to place.

On the one hand there are the extensive new industrial areas near Elizabeth and Newark or adjacent to Newtown Creek in New York City which are well-suited to manufacturing, but geographically inappropriate for residential living. These areas probably will be balanced by predominantly residential areas elsewhere, in portions of Bergen and Morris Counties or in Nassau, having easy access to them.

On the other hand, there are large numbers of plants, either isolated or occurring in small clusters, in areas that also provide highly satisfactory living environments. With the co-operation of alert industrial management and the leaders of communities, these plants may become the bases for a number of modern villages or small cities offering opportunities both for living and for making a living.



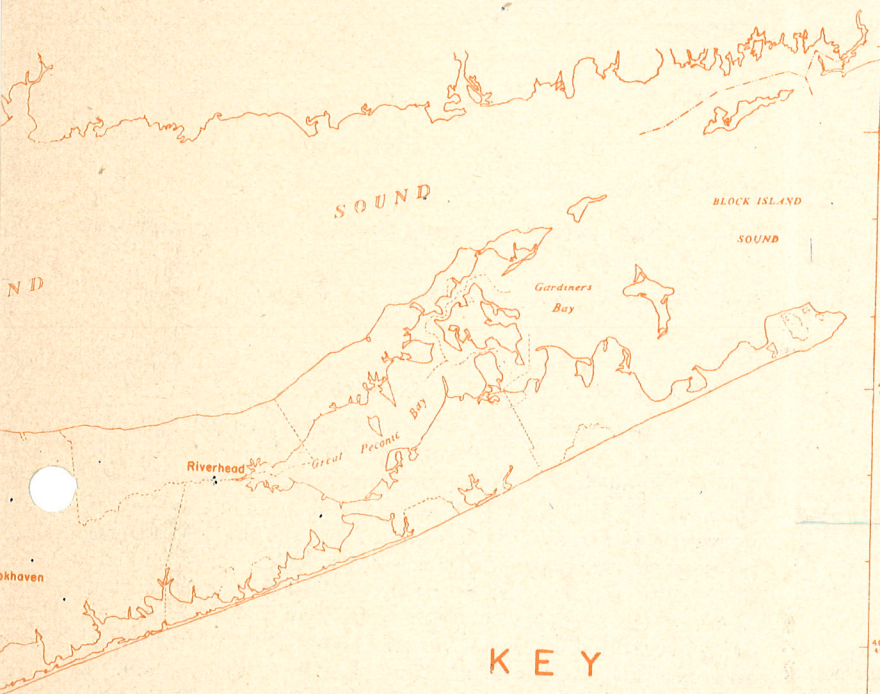
NEW YORK METROPOLITAN REGION

NEW JERSEY



CONNECTICUT

NEW YORK



KEY

- PLANTS BUILT 1946 THROUGH 1950
- \$¼ MILLION & OVER IN VALUE
- UNDER \$¼ MILLION IN VALUE

AREA WITH CONCENTRATION OF NEW PLANTS 1946-1950

AREA PREDOMINANTLY USED FOR INDUSTRY AS OF 1945

PLANTS 1946-1950

(AS APPROVED BY STATE AND LOCAL AGENCIES)

PRINCIPAL INDUSTRIAL AREAS IN 1945

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AN INTERPRETATION OF THE MAP

The new trends in industrial development appear clearly in the map of new factories 1946-1950.

The older industrial areas in the region are indicated as orange patches. Within these are the great majority of plants already existing at the start of the survey period in 1946. By and large they are the same areas that have contained the region's manufacturing for more than a century, and to which virtually all new plant construction in the past has gone.

The locations of 2560 post-war plants (out of a 2658 total) are shown as black dots. Completely reversing the past rule, only 424 new plants, a small minority, are located wholly within the traditional industrial areas. Another 948 are to be found scattered in relatively isolated locations.

The remaining 1188 are clustered in a fashion that establishes new industrial concentrations, sometimes near older areas, but often in largely unforeseen places.

In Connecticut, partially under the influence of strict zoning controls, the new clusters tend to extend old industrial districts. In New Jersey the new clusters are so extensive and numerous that one large producing area appears to be forming from Paterson to Linden and beyond. New York has a similar but smaller concentrated area growing in Queens and Kings near Newtown Creek; and a dozen separate substantial clusters are forming well out in Nassau County.

Many factors are involved in the selection of industrial sites. Historically, ever since the replacement of water wheels by steam engines and water travel by railroads, industry has sought central places served by a network of transport lines.

However, the greatly increased use of private automobiles by factory workers and the freedom of location afforded by truck transportation have given plants a new mobility. As a result of traffic congestion, many central industrial areas now are far less accessible than they used to be. Conversely, factory sites at key points in the suburban area now have risen greatly in relative accessibility.

Unless many people can be persuaded to change from a growing dependence on individual autos to traveling by mass transportation, central traffic congestion undoubtedly will continue to increase, and hence even more industry will seek outlying places with better access for automobiles.

FACTORS GAINING IN IMPORTANCE

Certain key factors influencing industrial location toward outlying sites have been gaining greatly in importance:

1. *Space* for one-story factories (designed to use new equipment and assembly line processes); for future expansion; for employee parking; for employee cafeteria and recreation facilities; for landscaping and setting (advertising value).

2. *Economy* through faster transportation of supplies and products and easier accessibility for employees; and through minimizing employee turnover by better living and working conditions.

3. *Decreased Vulnerability* by planned dispersion within the regional market area.

These all point strongly to an increasing decentralization of many kinds of industry.

ACTUAL NUMBERS AND COSTS INVOLVED

In total estimated value of new plants, five New Jersey counties lead the list (see Table I).

The "average value" column reveals a consistent tendency to build plants involving the larger investments in the more remote counties. New York County is a special case with its expensive multi-story, fireproof structures.

Nassau, second in numbers, ranks only ninth in total value with its low average value per plant.

TABLE I

TOTAL VALUE, AVERAGE VALUE AND NUMBER OF NEW PLANTS, 1946-1950, AND 1947 MANUFACTURING EMPLOYMENT BY COUNTIES

County	Total Value	Average Value	Number	1947 Manufacturing Employment
Union	\$ 25,563,000	\$ 92,300	277	66,460
Middlesex	17,143,000	149,100	115	59,089
Essex	16,841,000	68,700	245	144,068
Bergen	15,313,000	61,300	250	52,384
Hudson	14,314,000	64,800	221	143,424
Queens	13,013,000	57,600	226	97,602
Fairfield	10,256,000	76,500	134	112,168
Kings	10,049,000	43,700	230	229,395
Nassau	9,425,000	36,500	258	25,725
Passaic	7,734,000	54,500	142	78,521
New York	6,709,000	124,200	54	562,540
Morris	5,173,000	77,200	67	12,837
Somerset	4,798,000	184,600	26	13,767
Westchester	4,553,000	48,400	94	46,568
Dutchess	4,359,000	128,200	34	14,640
Suffolk	3,144,000	34,600	91	13,213
Bronx	2,629,000	37,000	71	39,877
Rockland	2,506,000	125,800	20	7,893
Monmouth	2,012,000	31,900	63	11,587
Orange	1,418,000	52,500	27	13,695
Richmond	291,000	24,300	12	10,821
Putnam	25,000	25,000	1	228
	\$177,268,000	\$ 66,700	2658	1,756,502

Sources. RPA survey of factory plans approved by state and local agencies, and U. S. Census of Manufactures, 1947.

TABLE II

GEOGRAPHICAL DISTRIBUTION OF NEW PLANTS 1946-1950 BY REGIONAL "DISTRICTS" AND BY FIVE MILE RINGS FROM MANHATTAN

Statistical Areas	South-west	West Central	North-west	North-east	Eastern	Total
5-10	6	297	85	31	216	635
10-15	9	228	169	51	40	497
15-20	40	81	117	50	130	418
20-25	51	38	15	16	77	197
25-30	43	29	6	15	44	137
30-35	17	34	4	34	39	128
35-40	18	5	1	12	18	54
40-45	1	...	...	24	9	34
45-50	...	...	1	8	13	22
50-beyond	...	...	26	103	10	139
	185	712	424	344	596	2261

0-5 (Manhattan)

299

Source: RPA survey of factory plans approved by state and local agencies.

Note: See map on P. 3 for designation of districts.

HOW FAR OUT AND IN WHAT DIRECTION?

While new plants appear to have been repelled from the most central portions of the region, Table II reveals the persistent strength of a pull toward the center (see "Total" column). Nearly three-fourths of the new plants lie within a twenty mile radius circle centered on the Port. Moreover, the pattern of dispersion is itself producing new areas of concentration, though at lower densities than the older ones. Thus, of the 2560 new plants, no less than 977 (38 percent) are concentrated in the 5 to 20 mile band of the West Central and Northwest sectors in New Jersey—roughly between Elizabeth and Paterson, west of the Meadows and east of the Watchungs. Nevertheless (as is indicated by the figures underlined) the greatest concentration of new plant investment in some sectors—Southwest, Northwest and Northeast—occurs well away from the port area.

TRENDS IN INDUSTRIAL GROUPS

While county statistics grouping all kinds of industry together are interesting and valuable, certain significant trends are revealed through an analysis of what has been happening to each separate industrial group. For the shifting locational trends have differed considerably according to the industry.

It must be recognized, of course, that important differences exist also within each industry group. Thus, some kinds of shops—small, new or experimental—tend to use rented quarters in locations where they may draw jointly with other small enterprises on repair services, raw material supplies and similar facilities. Later, these enterprises may be able to operate on a scale that permits greater geographical independence, and their operations may both require and justify increased space in larger outlying sites and buildings.

If the clerical and business functions that really are part of the total production process (though not included in this survey) had been studied and new office space added to new manufacturing plants, New York and Westchester Counties

TABLE III shows the counties having the greatest share of the new construction value for each industrial group. Approximately half the top counties were predominant in their respective groups prior to 1946, but many others are becoming important now for the first time.

might have appeared to better advantage. The Association will investigate office space trends in a future bulletin and study their potential effects on county growth.

Region-wide value of new manufacturing plant construction varied from \$31,396,000 invested in buildings for the chemical industry to \$414,000 in rubber and virtually no new investment in tobacco. The total value of all new plant buildings (excluding structures required only for the support of equipment) was \$177,250,000.

Space will not permit a reporting of all the trends observable in the twenty industrial classifications of the U. S. Census (see chart on P. 8 for listing). Some outstanding facts are summarized below, however.

Some groups of industries were widely distributed over the region: *machinery, both electrical and other, fabricated metals, transportation equipment, instruments, printing and publishing and miscellaneous.*

Conversely, several groups were highly concentrated in one or a few places: *food* close to the population center in Manhattan, along a line from Long Island City to Newark; *petroleum and coal products* in five tight neighboring clusters along the waterways from the Raritan to Upper

TABLE III
LEADING COUNTIES IN POST-WAR FACTORY VALUE,
BY INDUSTRIAL GROUPS

Leading Three Counties in Share of 1946-50 New Plant Value							
Industrial Group	County	Percentage	County	Percentage	County	Percentage	
Food	Essex	39.2	Bronx	14.5	Queens	11.5	
Textiles	Bergen	37.9	Union	14.3	Passaic	10.2	
Apparel	Kings	15.7	Bergen	12.8	Fairfield	11.1	
Wood Products	Nassau	36.7	Kings	16.2	Westchester	8.1	
Furniture	Nassau	20.4	Queens	16.8	Bergen	16.6	
Paper	Hudson	30.2	Queens	20.3	Bergen	11.5	
Printing	New York	33.7	Hudson	18.5	Bergen	13.7	
Chemicals	Union	25.8	Passaic	10.3	Morris	10.3	
Petroleum	Middlesex	39.4	Union	36.6	Hudson	12.3	
Rubber	Passaic	61.8	Bergen	12.1	Fairfield	7.8	
Leather	Orange	37.2	Union	17.8	Essex	13.1	
Stone, Clay & Glass	Somerset	45.1	Union	18.4	Middlesex	6.9	
Primary Metal	Middlesex	32.6	Bergen	20.8	Union	14.5	
Metal Fabricating	Union	33.7	Queens	16.1	Nassau	6.6	
Machinery	Fairfield	26.9	Bergen	16.7	Dutchess	15.5	
Elect. Machinery	Queens	17.7	Essex	12.5	Middlesex	11.5	
Trans. Equipment	Middlesex	54.4	Union	13.1	Bergen	8.5	
Instruments	Fairfield	37.8	Middlesex	14.6	Queens	14.1	
Miscellaneous	Nassau	20.6	Union	15.1	Hudson	13.3	
Tobacco	Virtually no new construction.						

Sources: RPA survey of factory plans approved by state and local agencies.

Newark Bay; *paper and allied products* in Hudson, Bergen, Kings and Queens, easily accessible to midtown Manhattan.

The New Jersey side of the Hudson attracted most of the plants in *stone, clay and glass, textile mill products, and rubber and rubber products.* The sample map on Page 7 strikingly illustrates the attraction of Jersey similarly for *chemical and allied products.*

On the other hand, 55 of the 65 new *furniture and fixtures* plants were built east of the Hudson.

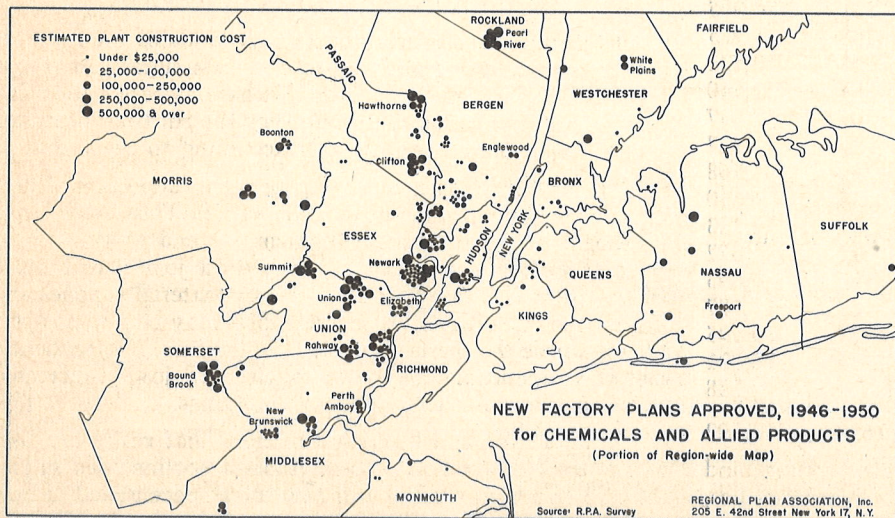
INDUSTRIAL GROUP MAPS

Reproduced below is a sample map from a series of twenty that show new plants, 1946-50, by types of industry. The size of each circle indicates the estimated construction cost of the building.

These maps are transparent and can be superimposed on maps showing transportation lines, or municipal boundaries. They also can be grouped in various combinations. (Recently, they were useful to the sales department of an industrial hoisting equipment company).

Another series of five transparent maps, one for each of the five years from 1946 through 1950, combines the circles for all twenty industrial groups.

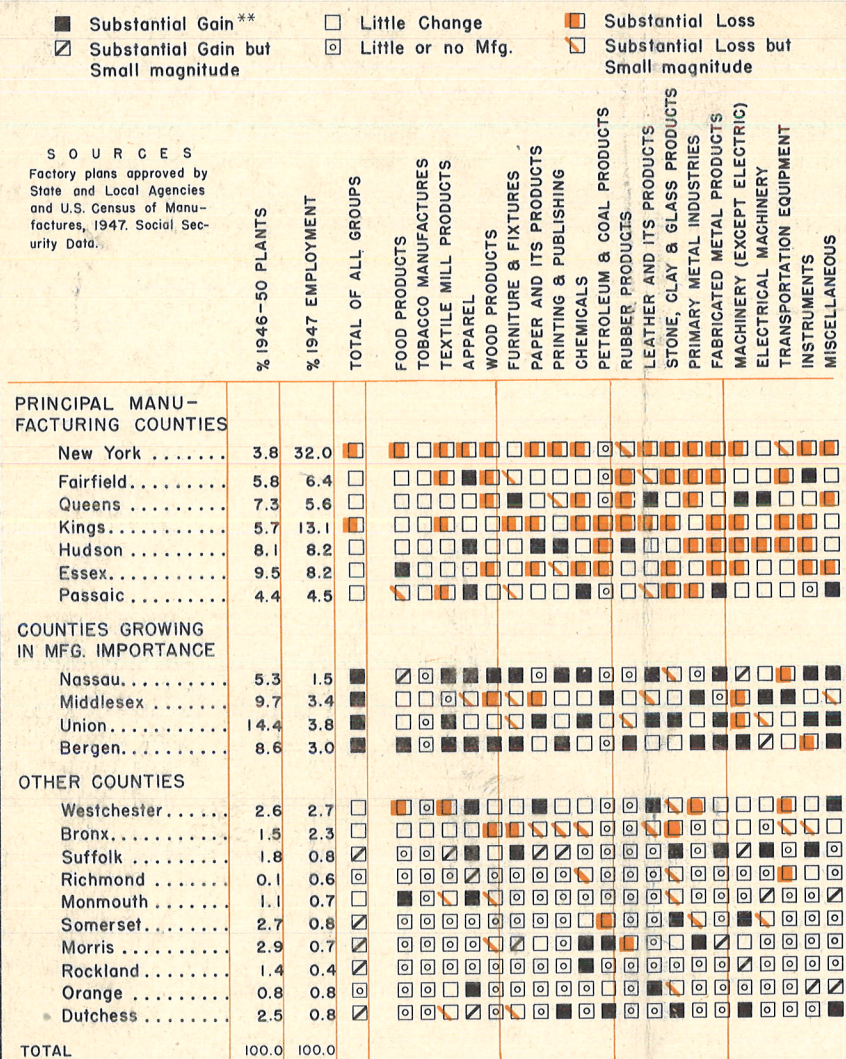
While it is not feasible to reproduce the entire series, all the maps are available for study by members of the Regional Plan Association.



To gain a more complete picture of recent trends it would have been helpful to compare the actual distribution of employment by counties at the end of the period surveyed with employment in 1946. The necessary basic figures are being tabulated (Social Security data), but they are not yet available. RPA will include these figures in a forthcoming bulletin on Economic Trends as revealed in the recent decennial census.

TRENDS IN COUNTY MANUFACTURING RELATED TO THE REGION — BY TYPES OF INDUSTRIES

RELATION OF THE SHARE OF NEW PLANT CONSTRUCTION VALUE, 1946-1950
TO THE SHARE OF 1947 MANUFACTURING EMPLOYMENT IN THE REGION USED
AS A BASE, BY COUNTIES FOR EACH INDUSTRIAL CLASSIFICATION.



* The relation between the following two factors has been expressed in the chart for each county and each industrial group:

(1) The percent of region-wide new plant construction value in each group 1946-1950

(2) The percent of region-wide manufacturing employment in each group as of 1947

** The gain or loss has been deemed "substantial" if the percent of new construction was either double or half the percent of 1947 employment. Factors involving less than three percent of the region have been designated as being of "small magnitude". Where both factors are less than one percent the zero symbol is used.

The above chart gives a general indication of changes in the relative standing of the region's twenty-two counties with respect to plant capacity for each of twenty industrial groups. It should be noted that the chart does not show either the actual numbers or magnitude of the industries involved nor the order in which the counties rank in each of the individual industries. Rather, it depicts shifts in relative status.

For most of the industrial groups, the chart suggests; first, an apparent tendency for those counties which dominated the region's manufacturing in the past to decline in status even though they still may be gaining somewhat in absolute figures; second, a trend which in time may cause the rise in relative status of a new group of counties; and third, the existence of a large group where industrial activities continue to have relatively little importance and generally show few signs of significant increase.

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