IMPACT OF LARGE INDUSTRIES ON SMALL COMMUNITIES*

Many communities have launched programs for attracting new industrial plants and have even offered inducements such as tax exemption or the rental of municipally-constructed factory buildings to encourage these new industries. Other small urban and even semi-rural communities are having new industries "forced" upon them by the joint operation of defense needs and industrial dispersal. In the first case, the new industry may be viewed without reservation as a desirable addition to the community. In the latter case, the new industry may be either complacently ignored or feared and opposed. In both, there is often little realization of the far-reaching changes which may result from the presence of the new plant. Little forethought is given to the population changes — both in numbers and characteristics — and the changes in community service and facility needs which will ensue.

What will be the impact of these new industrial establishments with their labor requirements and service needs on small communities not planned for rapid increases in population or industrialization? Can the potential impact be estimated in advance to permit planning for an easier adjustment to the changes which will inevitably take place? What knowledge do we have of the type, order and magnitude of change which can be expected and which should be planned for? How early should planning begin in order to be effective? In many cases, unfortunately, planning cannot begin until after land purchase has already begun, since this is often the first indication of a plant's decision to locate in the area. If such is the case, the role of planning may be reduced to the prevention of chaos, rather than the assuring of orderly growth. Within these limitations, what types of planning can be effective?

This bulletin will analyze the types of accommodations which will be required in a small community when a large industrial plant is established there, in the order of their occurrence. It will draw primarily upon the experience of towns during the past war and the present defense period to identify those areas in which maladjustments have occurred and to gain knowledge of what planning can do to lessen these maladjustments. The focus will be upon a methodology of analysis and a general program of action, rather than upon specific prediction.

* Copyright, American Society of Planning Officials, October, 1951.
Growing Importance of the Problem

There are two major reasons why the problem of estimating and planning for the impact of large industries on small towns has become of great importance recently. One is that a deconcentration of industrial location is taking place. Although this trend has been in operation for some time, it has now received official recognition and is being encouraged by the government due to the present emergency. A popular presentation of the stated government policy concerning dispersal is contained in the National Security Resources Board publication entitled *Is Your Plant A Target?* This report emphasizes the defense advantages to be gained through the location of new industrial establishments perhaps ten miles beyond the metropolitan core and separated a mile or so from adjacent plants. If such a policy should receive support from industrialists, it may mean the establishment of large industrial plants in many hitherto dormitory suburbs. The other reason why the problem has become more important recently is that, during any defense period, there is a tendency for certain industries to expand or to locate in small communities which are well-located with respect to transportation or power but which, under peacetime conditions, are not attractive enough to warrant the location of a permanent plant. These are the "boom" communities which are the sites of arsenals, ship-building industries, military installations and the like, towns which expand during defense periods but contract with the end of the emergency period. These trends, coupled with the renewed programs for community inducements to industry which many towns are engaging in, have focussed attention upon the problem.

Both dispersal and defense plant location are taking place. The government, for example, in selecting a location for the new hydrogen bomb plant, chose Aiken, South Carolina, because of its distance from industrial concentration and from other Atomic Energy installations, among other reasons. Many ship-building communities are being reactivated and military camps, arsenals and aircraft centers are also expanding. Dispersal by private enterprise is also proceeding. To cite but a few examples, one may point to the new General Electric Company plan for satellite manufacturing plants, with centralized management and decentralized production plants. (See "Big Industry Moves to the Country, Architectural Forum, July 1951, pp. 144-151.) Even offices, long considered "urban" creatures, have joined in the dispersal trend. (See "Offices Move to the Suburbs," Business Week, March 17, 1951.) Taking a random industrial example, it was reported in Georgia in 1948 that nearly one-half of the new industries locating there located in towns with less than ten thousand population and one-fourth located in towns with less than five thousand persons. Many of the towns participating in the programs of community inducements to industry fall within the population range of five to ten thousand.

What We Know So Far

Considering the importance of the problem in terms of both community development and national defense, surprisingly little is known about the exact nature of the impact of large industries upon small communities. After studying the confusion which arose in many towns which experienced rapid increases in
population and economic base during the past war, the 78th Congress Committee on Naval Affairs summed up their findings as follows:

"Most important of our findings was the universal lack of anticipation of these problems (transportation, highway congestion, school facility requirements, etc.), and the resulting aggravation of conditions. Proper and reasonable anticipation of expanded needs would not only have avoided most of the present difficult problems, but also would have given impetus, acceleration, and efficiency to the war effort. Forseeable emergencies must be met before they arise...."

We shall see in some of the communities described below how lack of proper anticipation and planning intensified many of the problems faced.

Recognition of the inadequacy of our knowledge has been given by the federal government, and some research has already been authorized. The Housing and Home Finance Agency is sponsoring two studies, one of the Savannah River project at Aiken, South Carolina (to be done by the University of North Carolina), and another of the Bucks County U.S. Steel plant (to be done by the University of Pennsylvania). There is much need for these and other studies.

Thus far, our sources of knowledge are two-fold. First, there is the fund of theoretical information on community requirements used in the planning of new towns which may be utilized in planning for large-scale expansion of existing communities. Secondly, there is the experience of both the past war period, the peace period and the present defense emergency to draw upon.

There have been many theoretical attempts to establish predictive ratios of population and facilities based upon the number of employees in basic industry. One such analysis, frequently used, is the following.

Given the employment of 50 persons in a basic industry, the following secondary and tertiary effects may be expected:

The industry will support from 300 to 400 people;
will require 75 to 100 homes;
will put 200 children in school;
will require six teachers;
will cause the purchase of 100 automobiles;
will support 10 stores with annual sales of $175,000;
will enable eight professional people (dentists, doctors, lawyers, ministers, etc.) to live in the community;
will pay about $175,000 annually for transportation;
will buy the products of 1,000 acres of land;
will provide a payroll of $85,000 to $85,000;
will establish a tax foundation of $800,000.

Another attempt to establish a formula to be used in estimating population and community needs is made in the recently issued Technical Bulletin of the Urban
Land Institute entitled "Planning Community Facilities for Basic Employment Expansion."

We seriously question both the estimates given above and those contained in the Urban Land Institute report. Although there is no question about the desirability of having predictive ratios, we would urge caution in the use of any of the rule-of-thumb analyses. Any of these ratios must be based upon an average of some kind, whether national or regional or even "comparable communities." As such, their usefulness and applicability is severely limited. In any community expanding rapidly and drawing population from outside, individual analysis is always necessary. There are selective forces in migration which may sometimes be generalized, but which often cannot be predicted a priori.

Our other source of information is the actual experience of communities containing dominant industries. A study of the experience of these communities may be both rewarding and misleading. Since each community is unique, both in terms of the particular industry, the permanent or temporary character of the industrial establishment, the size, structure and characteristics of the town to begin with, and the many thousands of details which go to make an individual town, it will be impossible to generalize the magnitudes of expansion and facility requirements. Any attempt to do so would be misleading. However, perhaps we can find similar patterns of expansion and similar maladjustments which arise in many of these communities, and which, it can be predicted with fair accuracy, will arise in other communities similarly expanded. Herein lies the value of studying the boom communities of the last war and the more recent experience in small communities which are the sites of new industries or industrial expansion. Theory coupled with the experience of these communities may lead us to certain general predictions concerning the problems of planning for similar communities and to a general program for planning activity. Such a program will be outlined at the end of this report.

Before examining these communities, however, a brief note concerning the atomic energy towns is included here. Although we have noted that in many ways planning for the rapid and large-scale expansion of an existing community is similar to the planning of a new town, the experience of the atomic energy towns is not included in this report. Many of the problems which will be faced by ordinary towns will exist because of the financial limitations of the community. That is, many of the maladjustments in rapidly expanding communities exist not only because of lack of foresight or because of a time-lag between the recognition of needs and the provision of facilities, but because the financial limits of the community make it impossible to solve the problems without assistance from outside. The Atomic Energy towns of Oak Ridge, Richland, and Los Alamos, although they required the employment of similar planning techniques, such as population estimation, capital improvement budgeting, municipal services and facilities planning, etc., were more fortunate than privately run communities in that they received federal subsidies which permitted the maintenance of a level of municipal servicing far higher than could have been achieved under private management. A rapid comparison between the operating costs of these towns and communities of similar size
is sufficient to reveal the extent of this subsidy. Other problems, such as community relations, politics and the relations between settled residents and migrant workers are also not present in the atomic energy towns in the same form as in existing communities. Still another factor limiting the validity of studying these towns is the fact that it is unlikely that these experiments will be repeated. A reversal of government policy has already taken place. Not only are the new atomic energy installations being located near large cities to eliminate the necessity of providing completely new facilities, but, in addition, plans are already underway to dispose of the existing government towns. It is expected that Oak Ridge, Tennessee, and Richland, Washington, can be placed in private ownership soon, through a method outlined in Report and Recommendations of the Panel on Community Operations on Oak Ridge and Richland. Plans for a similar change in Los Alamos will be presented in a forthcoming report.

For those wishing to investigate the planning of these towns, bibliographic references are given at the end of this report.

Experience in War-Boom Communities

Seneca, Illinois was the subject of an intensive study by a group of sociologists during the last war when the town experienced a population increase from 1200 to 6600 in a very brief period. Results of this study are to be found in The Social History of a War-Boom Community by Robert Havighurst and H. Gerthom Morgan, published in 1951. Seneca was a quiet town before the location of an LST ship yard in 1942. It had about forty commercial establishments including one general store, six grocers, four taverns, two hardware stores, three grain elevators, a lumber yard, a few restaurants (small), a drug store, three garages, five filling stations, and one funeral home. It had a six-room schoolhouse with an enrollment of some 175 students and, in addition, a high school with 131 students and a parochial school which had only 45 students enrolled. Fire protection in the town meant citizen volunteers. The sewage system meant 200 septic tanks and 125 privies and the pollution of a small stream which flowed through the town. And then, over five thousand new people came to town. All existing housing facilities were filled to capacity and beyond in the area 35 miles around Seneca. Trailers by the hundreds were deposited in backyards and in "trailer camps." Additional housing was still needed, housing which, because of the temporary nature of the boom, private enterprise was unwilling or unable to supply. The Federal Public Housing Authority built some 1500 family units and also provided a dormitory for 300 single men. Business boomed in the town, with the number of commercial establishments increasing first to 53 and finally, in the peak of the boom, to 65. The restaurant business expanded some 30-to 40-fold, news service increased by 8 times, and food stores and the post office increased their business in proportion to the population increase, some five times. The sales volume of clothing stores increased 4 1/2 times, drugs stores about 3 times, and hardware and furniture stores doubled their volume of business. Two years after the boom began, the peak enrollment in the schools was reached with over 700 students attending the elementary school, 252 students enrolled in the high school and 95 in the parochial school. To meet the emergency, the two lounges in the men's dormitory were converted into
classrooms and the temporary wooden structure which had served as construction headquarters for one of the defense housing groups was used to provide an additional eight class rooms. Finally, a new school building with 16 class rooms was begun at a cost of $110,000. School expenditures rose from around 45 thousand dollars in 1941-42 (pre-boom) to somewhere in the neighborhood of 124 thousand dollars in 1944-45 (boom). A fire service dependent upon citizen volunteers was no longer adequate and two full-time firemen were employed by the town. The older method of sewage disposal was found to be increasingly inadequate and was creating health hazards of serious proportions. Finally, a drainage and sewer system was established with a federal grant of $187,000 --- but these improvements were not completed until the end of the boom period. As before the war, garbage and refuse collection and disposal were taken care of by a private contract firm.

One of the most interesting parts of the Seneca study was the evaluation made by four residents and the author of how well the various institutions in Seneca met the boom crisis. It was felt that, in the initial stage of the boom period, commercial facilities, housing, schools, recreation, medical service, transportation, and sanitation were all sorely inadequate. Police protection, although not inadequate, was not satisfactory. After two years, housing, schools, medical service, police protection and sewage disposal were adequate and transportation, commercial and recreation facilities were passable. The school situation and sewage disposal remained inadequate up to the time shortly before the boom ended, and recreation and transportation remained unsatisfactory to the very end.

When the ship yard closed in 1945, the boom came to a close. War workers left, the temporary housing structures were carted away, the trailers rolled out, and population sank back to only slightly above its pre-war population. School enrollment returned to only 30 above the pre-boom enrollment, 36 stores were vacant, and there was enough housing. The town purchased at bargain prices the new school and sewer system constructed by the federal government. Readjustment took place.

Neosho, Missouri, was another town which was studied fairly intensively during the last war. Its population numbered 5,000 when Camp Crowder was located only three miles south of the town. Some eight hundred persons were employed in the commercial and industrial enterprises of the town, the industries being mostly the servicing of goods for farm use and the handling and processing of farm products. Of the thousands of construction workers imported to build Camp Crowder, from 5,000 to 15,000 of them settled in Neosho and its immediate environs, while another several thousand found living accommodations in the nearby towns of Joplin, Carthage and Webb City, or in surrounding counties. The peak construction period was reached three months after construction began with 21,000 workers in the area.

A housing shortage appeared early, with rents rising some 46 per cent in a three-month period. Everyone took in roomers, and every kind of living arrangement - bunk houses, tents, trailers, "sleep" and "cot" houses, makeshift shel-
ters - were utilized. At the peak period, there were over 500 trailers in camps or in yards of private residences. The first effects of the pre-construction pe-
riod was felt in real estate transfers with those properties along the highway on the periphery of the camp being most active. All along the highway, roadhouses, liquor stores, trailer and tent camps, jerry-built hotels, gas stations and amuse-
ment centers sprung up. There was no roadside control, although it was much needed. Once the construction crew arrived, the impact was first felt in such commercial enterprises as hotels, restaurants, grocery stores and filling sta-
tions. Men's working clothes received the greatest increase in sales and the sale of trailers led all other types of credit business.

Following quickly on the heels of the housing problem were the concomitant difficulties in the fields of health and sanitation. It was estimated by the com-
munity engineer that an investment of $600,000 would be necessary to bring sanita-
tion facilities up to the level required by a permanent population of 10,000. The community received federal aid in the provision of improvements, but the local community contributed a large share. For the water works addition, $32,700 were given as a federal grant to supplement the $17,263 provided by the town. The government supplied $48,742 to supplement the $200,722 supplied by the city for a new disposal plant and for sewer additions.

With the doubling of population came a tremendous overcrowding of the three elementary schools and the Junior-Senior high school in the community. Class-
rooms built for a maximum of thirty-five pupils were, in many cases, accom-
modating twice as many.

Charlestown, Indiana, was one of the most fabulous boom towns of the past war. The site of an 86 million dollar DuPont smokeless powder plant, the town experienced a population increase from 936 to an estimated 17,000, despite the fact that the entire metropolitan region was a source of labor and commuting from a 60-mile area around the plant was extensive. The peak construction force was close to 26,000 and the peak employment force was somewhere in the neighborhood of 17,000. Charlestown was somewhat more fortunate than many boom towns in that it received planning assistance early. As the plant got underway, there was an immediate need for such control measures as an interim zoning ordinance, a county zoning ordinance, subdivision controls and a simplified building code, all of which were provided by the planning consultant. With the large reliance upon commuting, there was an immediate need for an improved transportation system to alleviate the most difficult traffic snarls. Train and highway transportation to and from Louisville needed extensive improvements. Since Charlestown had no previous ordinances regulating the movement of traffic or the parking of vehicles, serious problems ensued until a traffic code was worked out. One observer re-
ported that traffic on the state highway was so heavy that a traffic light twelve miles away at Jeffersonville stopped automobiles in Charlestown. A traffic survey was made and the enforcement of traffic rules was improved. To alleviate the parking problem, an ordinance was drafted restricting the parking of vehicles at certain peak traffic periods and in certain areas. Stickers were distributed to owners living in Charlestown which permitted them to park in otherwise restricted times and places.
Despite the efforts to discourage workers from residing in the town, a housing shortage could not be prevented. Within the area there were 753 trailers in 21 licensed trailer camps and, in addition, every habitable shack was occupied and trailer sales continued to skyrocket. A federally-supported program supplied an additional 75 houses in Charlestown, 75 in Jeffersonville, 100 at New Albany and 150 in Louisville, but the shortage still persisted.

Along with the increased housing and more intensive use of existing housing came the need for an extension of sewers and water mains. The increasing problems of garbage disposal were solved through a private contract firm. Throughout the area, there was fear of epidemics and the Indiana State Board of Health assigned an agent to the area full-time. The Indiana State Police joined to alleviate some of the traffic problems, establishing an office in the town and assigning six full time police employees to the vicinity of the plant. The Community Service Defense Council also assisted in solving the problems of the area.

As could be expected, the school plant was taxed beyond capacity, even though many of the workers left their families at home. During the first period of expansion, three hundred new pupils enrolled in the existing school and plans were immediately made for a new structure.

With the close of the powder plant at the end of the war, Charlestown completed the cycle of growth and contraction, returning to its previous population level.

Bremerton, Washington, the location of the Puget Sound Naval Shipyard, has known a series of such expansions and contractions. It experienced the cycle during the first World War, and again in the past war. In 1940, the civilian labor force at the Yard was around 3,000 and the town's population some 15,000. By January of 1941, the labor force at the Navy yard increased 235 per cent to a total of 10,000 and the town's population soared to 85,000 during the peak period. The following chart issued by the mayor of Bremerton in 1945 was entitled "What Has Happened to Bremerton in Five Years." The dramatic changes are self-explanatory.

As compared with the peak population of 85,000 in World War II, the population had dropped to 27,746 in 1950. However, with the renewal of defense activity, the population has already risen to over 33 thousand and will continue to rise. The dramatic increase in population during the past year is shown by the fact that on June 25, 1950, there were 1,172 vacancies in the community, whereas, by June 25, 1951, there were 363 applicants on the waiting list for housing. Many of the dwelling units at Bremerton were temporary and should have been torn down, but these will continue in operation due to the need. In addition, it is estimated that some six thousand additional units will be required.

Financial difficulties are present in Bremerton in the extreme. The only substantial industry in the community is the ship yard which is tax-exempt. Without a payment in lieu of taxes, the community could not hope to meet its expanding expenditures.
<table>
<thead>
<tr>
<th>Item</th>
<th>1940</th>
<th>1941</th>
<th>1942</th>
<th>1943</th>
<th>1944</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,073'073</td>
<td>2,073</td>
<td>3,073</td>
<td>4,073</td>
<td>5,073</td>
<td>6,073</td>
</tr>
<tr>
<td>69'769'568</td>
<td>29'650'056</td>
<td>30'230'298</td>
<td>30'710'548</td>
<td>31'190'808</td>
<td>31'671'068</td>
</tr>
<tr>
<td>120'000</td>
<td>200'000</td>
<td>280'000</td>
<td>360'000</td>
<td>440'000</td>
<td>520'000</td>
</tr>
<tr>
<td>6'000</td>
<td>12'000</td>
<td>18'000</td>
<td>24'000</td>
<td>30'000</td>
<td>36'000</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.000'000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Note:**
- Values are in dollars.
- The table shows the increase in various categories over five years.
The placement of the Willow Run Bomber Plant on open farm land many miles from Detroit created problems of immense proportions for the plant, for Detroit, for the Village of Willow Run (erected finally at a cost of $19 million), and for the small neighboring communities which had thrust upon them the responsibility of providing housing and community facilities for the thousands of employees of the plant. One small community which felt the impact of the new plant most intensively was Ypsilanti which saw its population increase from 12,000 to 18,500 within a short period, as families doubled up, conversions took place, and buildings were constructed. Although the plant was outside the taxing jurisdiction of Ypsilanti, the town's expenditures rose from $450,720 in 1941-42 to over $1,000,000 in 1943-44. The police department expanded from 16 to 28 employees, school enrollment increased some six per cent, the local hospital was enlarged by 150 beds at a cost of $505,000 (financed by federal funds), to mention but a few of the budget items. All sources of revenue were tapped. Traffic fines and fees were increased, parking meters installed, federal assistance received, and a reassessment of property valuations was made, increasing the tax base of the community by fifty per cent (from $10 million to $15 million).

Soon after plant construction, it was realized that a tremendous transportation system should be necessary for commuting workers. Within a few months, a $26 million system of access highways was constructed with federal funds.

The Willow Run experience presents a useful and interesting example of the type of intergovernmental relations made necessary by a large installation. All in all, every level of government was called upon to participate in the solution of the problems created. The federal government played an active role, several counties participated in meeting the recreational needs of the workers, Washtenaw County was active in the health program, the towns contributed their part, and the State Department of Health, Police, and others also participated. Some of the details of intergovernmental relations in the Willow Run region are described in "Willow Run Produces Bombers and Inter-Governmental Problems," by Arthur W. Brommage and John A. Perkins, appearing in The American Political Science Review for August 1942. Another source of information is a forthcoming study to be published within the next few months by Harper and Brothers, entitled, Willow Run: A Study of Industrialization and Cultural Inadequacy by Lowell J. Carr and James E. Stermer.

Numerous other communities were similarly affected during the last war. For example, Brownwood, Texas, had a pre-war population of about 13,400 which rose to somewhat in excess of 40,000 at the peak period during the building of Camp Bowie. After the first two weeks of construction, the population had doubled. When the construction force left, 3,000 troops and their families moved in. In May, 1942, the civilian population of the town numbered some 25,000. Listed as the major problem of the area was sanitation, made more difficult by the large number of trailer and tent camps which sprung up. The second most important problem was traffic, as the inadequate streets were taxed beyond capacity. The cost of operating the city rose 32 per cent and the city had to wait a year before new taxes could be collected to help finance the increased expenditures. Large revenue bonds had to be issued for sewer extensions and other improvements.
Another community which experienced a rapid increase in population was Orange, Texas. In the 1940 census, it had a population of some 7,000 persons, but by 1944, this had increased seven-fold to a total of 50,000 population. Orange, Texas, was the site of Consolidated Steel Corporation Ltd.'s construction of a shipyard, and during the peak employment period, 21,000 men and women found jobs in this installation. During the construction period, housing was in very short supply and despite the fact that almost everyone took in roomers and many homes were converted to multi-family use, workers lived in trailers, boats, automobiles, lean-to's and other forms of makeshift housing. Whereas in 1940, school facilities existed for 2,000 students, by 1944, enrollment had reached 9,000 and the estimated enrollment for the following year was placed at 10,000. Almost $1 million were given by the Federal Government for schools in the community, and large federal grants were also obtained for a new hospital (60 beds), a public health center, a fire station, a sewage-disposal plant, storm sewers, and street improvements and widenings.

Richmond, California, grew from a city of 23,000 population in 1940 to a metropolis of over 100,000 in the first five years of the past decade as a ship-building and port expansion program brought thousands of workers to the area. It presents an interesting comparison to the smaller war-boom communities since it experienced the same proportionate increase but began better equipped. Another value of studying Richmond is that, unlike war-spawned communities in other regions, many of the boom towns located on the west coast did not face as difficult problems of readjustment, because of the general western movement of population.

The communities we have examined thus far were, with few exceptions, war boom communities in which expansion was temporary. They were also communities in which, with few exceptions, little planning activity was undertaken. The following two communities differ in these respects. Not only were the installations of a more permanent nature, but planning was instituted to alleviate many of the difficulties created.

Maryville, Tennessee, saw a rapid increase in her population during the last war when the Aluminum Company of America (ALCOA) increased its working force from 4,500 in January 1939 to approximately 9,400 in July, 1941. The people, and especially the real estate groups, were quick to sense the danger to the community of such a rapid increase and expressed a desire for planning. Early in the defense period, a planning commission was appointed which in turn hired a planning technician. The community was almost entirely deficient in basic community data and so, the first activity undertaken was the construction of a base map and the conduct of a land use survey. Another study begun early was of housing capacity and requirements. In addition to a survey of existing housing available through private enterprise, a questionnaire was issued to all ALCOA employees on housing requirements. Information was obtained from all employees on marital status, size of family, race, occupation, present living accommodations, rental and type of housing desired and rental willing to pay, which served as a valuable source of information on which to base housing plans. On the basis of company estimates of the labor force to be employed at various periods, and estimates of the number of
new jobs in commercial establishments and satellite plants, the future population
of the community was estimated. From this, some rough estimates could be
made of housing need, school age population and school requirements, as well as
other community needs. Despite the somewhat rough predictions made by often
crude methods, there is no doubt that early planning helped to prepare Maryville
for the changes which later took place.

Although Lexington Park in St. Mary's County, Maryland had a late start in
planning, it is an encouraging example of a planned solution to expansion-gener-
ated problems. During the last war, the Navy established an air test center in
St. Mary's County. At first it was believed that the installation was a temporary
one and workers sought all types of housing accommodations - trailers, makeshift
dwellings, overcrowded apartments. By 1944, it was definite that the installation
was to be a permanent one and that the thousands of civilians workers at the cen-
ter would need permanent housing to replace their temporary accommodations.
The county had a population of roughly 15,000 in 1940. By 1950, the population had
nearly doubled, and over half the population could be accounted for by a connec-
tion with the Naval Station. In the last decade, the value added by manufacture in
the county increased 150 per cent and the number of manufacturing firms increased
from four to twenty-one.

The older settlers resented the presence of the Station. As reported in the
Baltimore Sun of August 4, 1946,

"Regardless of what the Navy officers said, county folks saw the picture
of the area in the light of what had happened in the past two years (during
the temporary boom period). They saw more honky tonks - and worse -
springing up along once quiet country roads, they saw big signs going up
to attract customers where once there was only Southern Maryland
Sedateness."

The people had to be "sold" on the idea that planning and zoning could help them
regain certain desirable aspects of their community as it was before the war and
ease the community over many of the new problems. This was not easily done.

The community was strongly opposed to zoning and planning. In 1933, when
the Maryland zoning enabling legislation was passed, the county had "succeeded"
in obtaining an exemption from the provisions of the act. They still remained in
opposition. Aided by the Maryland State Planning Commission, under the direction
of I. Alvin Pasarew, the job of "selling" planning to county residents began. After
much difficulty, the county commissioners agreed to support enabling legislation
for zoning and, after additional difficulties, such legislation was passed. When the
county refused to appropriate funds for a planning technician, the Navy agreed to
supply one and the St. Mary's County Planning and Zoning Commission was set up.
Planning went ahead, with the passage of a zoning ordinance, the enlargement of
Lexington Park, a settlement of war-built homes, a shopping center, etc. Other
towns in the vicinity, seeing the merits of this venture, asked for zoning and plan-
ing.
With the present defense period, Lexington Park is again faced with the prospect of additional growth and has already been declared a critical defense area. But it is better prepared for the changes ahead.

According to Mr. Pasarew, the following lesson may be learned from the Lexington Park experience:

"Citizen demand and interest is essential in establishing planning and zoning. We might have forced zoning through with the aid of the threat of condemnation. Instead, we first created an interest in and demand for planning and zoning before their establishment. The result was that St. Mary's County has a good zoning ordinance instead of just a mediocre one that pleased no one."*

The bibliography at the end of this report contains references on the above communities and to articles and books on many other towns affected by the defense program of the last war.

An Evaluation of the Experience of the Last Defense Period

Before proceeding to more recent examples of large industries in small communities and to our generalized pattern of community adjustment, it might be well to summarize some of the lessons of the last war. It is safe to state that in every case examined, there were many deficiencies in community adjustment. Although it would be unrealistic to assume that these maladjustments could have been completely eliminated by proper and advance planning, there is little doubt that many of the ill effects might have been considerably reduced

(1) if the people of the community faced realistically and early enough the problems which were to confront them;

(2) if the antagonisms between the permanent residents and the expansion-attracted newcomers could have been replaced earlier by understanding and cooperation;

(3) if a full understanding of the nature of the changes about to take place could have resulted in the immediate institution of planning, adequately financed and staffed and backed by local support; and

(4) if the planners faced with the problems had greater knowledge and foresight as to the changes and the problems which they would encounter.

Although we are still deficient in the knowledge and the wisdom required for solving the complex problems created by rapid population growth and industrial expansion, we are considerably better prepared now than we were during the last war. For one thing, we will be able to learn from the past experience which should

* We are grateful to Mr. Pasarew for supplying much of the above information and for his comment.
serve as guidance. However, despite the greater knowledge we can bring to the problem this time, the other three preconditions for successful planning remain. These problems are, in a way, the most important ones to be faced in communities experiencing rapid growth. They require a "selling" of planning with greater urgency than in stable communities but, because of the dramatic crises which will arise, it may be easier to sell planning on the basis of tangible need.

In the job of gaining community backing for planning, not only will the older residents of the community have to be brought in, but the planner should attempt to gain support from the various new groups. Although the traditional attitude of industry toward the community in which it locates has largely been a negative one, there is an increasing realization on the part of industry that the type of community strongly affects the availability of labor force, and as defense conditions increase the competition for labor, community satisfaction becomes of greater importance. Not only does the industry have a stake in the community plan because of worker satisfaction but also, because the industry, if it is located within the town and is not tax-free, is one of the major contributors of taxes to finance community development. Thus, they have a primary interest in efficiency and good planning. Another group which can and should be enlisted to support planning is labor. The interest of labor and the labor union is perhaps even more immediate and demonstrable than that of management.

By bringing together representatives of the older established community, the industry and the new workers, a citizens planning group may serve a dual function. It will aid the effectuation of planning measures and, in addition, may succeed in reducing some of the antagonisms and hostilities which were present in many of the communities studied above. It has been observed that these hostilities tend to diminish with greater familiarity. Since another precondition of successful planning is this decreased hostility, this in itself would be a strong argument in favor of citizen organization.

There must be no illusion that planning can solve all the major problems. The problem of finance, no matter how much local planning succeeds, cannot be solved at the local level alone in many instances. New state legislation broadening the sources of revenue, expanding the debt limit, etc. may be required. Federal assistance in the provision of many municipal services will probably be necessary. The planner may be called upon to assume the role of liaison between the local government and the state and federal levels. In addition to the relations between local government and the other levels, it may be advisable for community planners throughout the affected region to form a regional planning organization to work out jointly solutions to region-wide problems. If there is one thing which comes out clearly from a study of boom communities, it is that the impact area in often much more extensive than the immediate eniron of the new plant or installation. In some cases, the county may be the most local unit for the establishment of regional planning; in other cases, it may be completely inadequate.

Despite the fact that financial problems cannot be solved completely by the local planner, there is much which he can do to assist. A sound and realistic program for capital improvements based upon priorities of necessity can be an im-
portant contribution from the local planner. In addition, the local planner must
view the future economic status of the community, must evaluate the permanence
or temporary nature of the large installation, and must begin to formulate a pro-
gram for readjustment if the installation is temporary. If temporary, with the
closing of the installation, there will be a large labor surplus in the area. Either
this labor force will leave, requiring a readjustment of the community to some-
where in the neighborhood of its original population or permanent industries may
be enticed to the area because of the available labor pool. This latter possibility
should be investigated and future policy planned.

The Present Situation

As in the last war, defense activity in the present crisis has brought many
new industries and military installations to small communities as well as large.
Again many communities will be faced with the need for planning for rapid expan-
sion. They will be aided in part by several government programs.

In areas of defense activity where housing is in short supply, the government
has authorized the HHFA to designate them as critical defense areas and to relax
credit restrictions. Where private enterprise still does not supply the required
housing under the stimulus of these credit relaxations, the Federal government is
authorized to construct it. In a release of July 15, 1951, some twenty-eight criti-
cal defense areas were listed. Four were sites of atomic energy installations, the
large majority were in the vicinity of military installations, several were arsenal
locations, and the remainder were the locus of chemical industries. Since that
time, a number of additional areas have been so designated, bringing the total
number of critical areas up to around forty-one.

Under this original program, the government was not able to offer assistance
in the provision of needed community facilities. On September 1, President
Truman signed the Defense Housing and Community Facilities and Services Act,
making it Public Law 139. Title I establishes the criteria for delimitation of criti-
cal defense areas. To qualify, a community must have a new installation or a
substantial expansion of an existing defense plant or military installation; it must
have a substantial in-migration of defense workers or military personnel; and, in
addition, there must be a substantial shortage of housing for these workers which
threatens to impede defense activities. Title II of the act governs FHA mortgage
insurance aids in defense areas. Title III is most important since it deals with
government aid for defense housing and community facilities and services. Fifty
million dollars have been appropriated for the construction of defense housing and
sixty million dollars for the provision of community facilities. Included in the defi-
nition of community facilities and services are the installation and maintenance of
water works, sewer systems, garbage and refuse disposal, police and fire protec-
tion, water treatment and purification facilities, recreation, day-care centers, and
the like. No provision is made in this act for federal assistance to schools, this to
receive special treatment in another act. Title IV is concerned with federal pur-
chase of sites to be developed by private enterprise, for which purpose ten million
dollars have been appropriated.
In addition to the financial assistance available from the federal government, communities may also receive aid from the United Community Defense Services, a federation of fourteen national health, welfare and recreation organizations. According to an account in Communities, USA, "The UCDS aids local groups and communities at their own request by sending field workers to make scientific surveys of their needs and by providing temporary part-time, or if necessary, full-time experts in various health, welfare and recreation fields to help communities start their own programs, either voluntary or tax-supported."

Despite these aids to communities, many of the small towns which have already been "hit" by large industries are having difficulties in making an adjustment. The federal assistance has come too late for them. Whether it will be of real assistance later on remains to be seen.

Some Experiences in the Present Defense Period

Just outside of Morrisville, Pennsylvania, on the banks of the Delaware River across from Trenton, the United States Steel Company is erecting the Fairless Steel Plant. It is the largest steel plant ever to be constructed at one time and has a capacity of almost 2 million ingot tons. The site for this plant was previously in agricultural use, devoted primarily to the raising of spinach. The change from spinach to steel-making as an economic base has created problems of fantastic complexity. In addition to the construction of the new steel plant, other industries, suppliers and steel fabricators, are proposing to locate within the area. To mention but a few of the additional industrial establishments, there will be a $3 million General Refractories plant, a $3.4 million expansion for Warner Company, a $300 thousand Associated Box Factory, and an $8 million Sun Oil Refinery. Only rough estimates exist concerning the number of industrial personnel which will be required for these industries. These estimates place the eventual labor force at from 4,000 to 5,000 workers. Many of these workers will find accommodations in Trenton, Philadelphia and other neighboring cities. But, already, the small town of Morrisville is being taxed beyond its capacity with the influx of construction workers for the plant and for other industrial establishments. Despite the presence of nearby metropolitan centers, additional housing will be needed in the area. To meet these housing needs, several large developers have announced plans to construct housing in the area, and at least one, Galbreath, has already begun the construction of a new town called Fairless which will have a population in excess of 10 thousand. Gunnison homes are being erected at a rate of 100 per week in this development. In addition, the Levitts have announced plans to build 16,000 homes on a 2,000 acre tract in the vicinity. Their construction schedule calls for houses to be built in 1952 at a rate of 150 per week, and the construction of a model home has already begun.

One of the major difficulties to be faced in this area, in addition to the overwhelming problems of housing, community facilities, municipal services, etc., is one of financing. To whom will these industries pay taxes, and how much will they pay?
The Fairless works will be valued eventually by Falls Township at $400 million. In 1950 the total property was assessed at some $340 thousand. In September of this year, the assessment was raised to somewhere in excess of $7 million, and was later raised to almost $14 million when the school board complained that the original assessment was too low to provide the district with funds to meet the heavy influx of new pupils which will result from the construction of the Fairless plant. After a conference with United States Steel, this assessment for 1952 was lowered to slightly over $8 million.

However, will the jurisdiction receiving the taxes also have the complete responsibility for providing services and housing for the thousands of workers and their families? Obviously not. The impact of increased requirements will fall upon communities throughout Bucks County, on Philadelphia, across the river on Trenton and other communities in New Jersey. It is a fairly well established fact that most residential property does not contribute sufficient funds in taxes to pay for the municipal services it receives, if these services meet even minimum standards. The communities in which these workers will reside, if they do not receive some of the revenues forthcoming from the industrial plants, will be financially incapable of bearing the burden of providing even an inadequate level of servicing unless some financial program can be devised which will equalize the load. Communities in the state of Pennsylvania are in a less unfortunate position than those in most states in this respect, because of the liberal state laws giving municipalities the right to raise revenue from a variety of sources. One possible solution would be for the county to levy property taxes, the revenues from which it could apportion to the various municipalities within the state according to relative need. Such a procedure will probably not be politically popular in those areas which will feel the impact of the new industries less sharply. Another possible solution would be for the state to assume more responsibility toward the region and allocate more state-collected revenue to it. Even with such apportionment and with the increased revenues from sources other than the property tax, it is extremely doubtful whether the situation can be solved without some sort of federal assistance.

Similar problems of "jurisdiction" and "responsibility" will arise in other communities in which the industrial establishment is located within one taxing area while the impact of its operation falls upon communities in different political subdivisions from the plant. Although this bulletin has been limited to the impact upon the immediate community, it must not be forgotten that, with modern transportation and the journey to work pattern, the problem is essentially a regional rather than a local one.

On a 300 square mile tract of land bordering the Savannah River, the Atomic Energy Commission is constructing a plant which will be used in the preparation of the hydrogen bomb. In line with the new government policy of utilizing existing community facilities instead of constructing government-owned towns, the site selected is 27 miles south of Augusta, Georgia, the largest city in the area with a population of around 70,000, and a little farther distant from Aiken, South Carolina, a resort town of some 7,000 population. About 6,000 natives of the area have
been displaced by the government project, including the entire population of Ellenton, the largest town on the site with about 700 persons. Seventeen thousand workers are now on the payroll of the construction force, and, when the peak period is reached in the summer of 1952, there will be approximately 40,000 workers in the area. An additional 25,000 persons are now in the immediate area of the plant, and when the peak period is reached, it is expected that the population gain may exceed 100,000. Neighboring towns throughout a large peripheral area are feeling this increase of population. It is estimated that Augusta's population has increased some 7,000 in the past six months, whereas Aiken's population has jumped from 7,000 to 9,000. Smaller towns are experiencing an even greater proportionate increase. For example, Jackson, South Carolina, was small crossroads establishment of 200 persons last year. Now incorporated, it has a population of over 1,000. New towns, such as New Ellenton, have also grown up in the area.

As could be expected, there has been a tremendous increase in land values, especially along the highways leading to and from the plant. Farm land along highways has jumped in value from $50 an acre to $150. Commercial sites have increased even more, some soaring from $250 an acre to $1,500 per acre.

In general, the area has been slow to add to its permanent housing supply, realizing that the construction boom period is a temporary one. Planning is being done for the long range permanent operating force of some 5 to 6 thousand workers. One 700 unit development is under construction and permanent housing has been progressing slowly in Augusta, North Augusta and other neighboring communities. The large gap between permanent housing needs and construction worker needs has been bridged by trailer accommodations. Trailer camps ring the government tract, and it is estimated that some 3,000 trailers in 10 trailer camps and in isolated tracts are providing housing accommodations. Even this has not eased the housing situation sufficiently, and, to encourage the provision of an additional 4,000 trailers, DuPont Company has accepted bids from private suppliers and has given a 90 per cent guarantee of occupancy.

A fairly significant trend has been noted in the Savannah River project and other similar ventures calling for large numbers of construction workers. Many migratory construction workers, in particular the skilled craftsmen, tend to bring their families with them, moving in their trailer homes as construction opportunities develop. This trend, if it becomes general, will have wide repercussions for the planning of school and recreation facilities in similar boom communities.

As in many communities during the last war, reported above, clashes have developed between the new residents of the area and the old settlers. This is particularly the case in Aiken, long an exclusive resort town. The wealthy citizens are disturbed about the changes which are taking place and the loss of their exclusiveness. But more than that, they are disturbed over the loss of riding trails and the peaceful agricultural setting. Many have resented and resisted the invasion of their town by the construction force. Crowded stores, traffic congestion and the ubiquitous trailer camps have brought home to the residents of Aiken that their community will never be as it was.
Brandenburg, Kentucky, is another community which will have to meet the challenge of industrial expansion. The Mathieson-Hydro Carbon Corporation is building a $17.5 million plant only a few miles from the business district of this town which, in the 1950 census, had only 800 persons. The 1500 construction employees for the plant and for the subdivision of 40 homes being constructed for Mathieson administrative employees drive in from neighboring towns or live in trailer camps in the community. Already, the population of the town has risen to about 1500, and plans are being made for an eventual population of 5 thousand. In addition to the hydrocarbon plant, there are plans for a $2.5 million plant to be built by the General Aniline & Film Corporation, which should further increase the population pressure. Among the needs cited for the town are an expansion of the municipally-owned water system, the addition of a sewer system and, of course, more housing.

The reactivation of a large naval hospital in the town of Corona, California, (population 11,000) has created new problems for this small community. Lacking a mass transit system, or even a bus line, the town is overwhelmed by the transportation difficulties and congestion. Recreation facilities are inadequate, and school enrollment has reached such proportions that the three new schools built at the end of the war are completely insufficient and temporary bungalows have been brought into use for class rooms. Housing is short, and new construction is blocked by a shortage of mortgage money. The community may expect an additional burden when a proposed new industrial establishment locates there. This plant alone will have a payroll of some 4,000 employees.

The presence of several military installations and rapidly expanding defense plants has led to an increase of 50 per cent in Tooele, Utah's population which, in 1950, was only 7 thousand. Despite the tremendous employment opportunities, builders have been reluctant to construct permanent housing in the area, and for-sale housing has remained empty for lack of buyers with sufficient down payment funds. Thus, many of the workers in the area are living in converted basement apartments or are overcrowded and waiting for apartments in the town. Trailer camps and a 250 unit emergency housing project left over from World War II are helping, but not solving the situation. Schools and traffic are particularly hit by the new population requirements.

For a brief résumé of the experiences of several other small towns hit by defense activity, reference should be made to an article entitled, "Seams Burst in Little Boom Towns," which appeared in the October 13th issue of Business Week magazine. In addition to the situation in Corona, California and Tooele, Utah, the article discusses the problems faced in Columbus, Indiana; Huntsville, Alabama; Tullahoma, Tennessee; and Rolla, Missouri.

Labor shortages in many critical defense areas are already presenting serious production problems, and migration of labor to these areas is necessary and to be expected. For example, the most recent report published by the United States Department of Labor (The Labor Market and Employment Security, September 1951) reports labor shortages in six major areas. In the Aiken-Augusta area, the
site of the AEC Savannah River project, despite the tremendous migration of labor to the area, there is still a noticeable shortage. The population increases which have already occurred have severely taxed the housing/community facilities. If this situation is not eased, it may become increasingly difficult to attract labor to the area. Another area of shortage is the Davenport-Rock Island-Moline area, the site of a major ordinance plant. It is estimated that area employers will require a total of 5,000 additional workers to meet scheduled expansion needs. It is also estimated that only 1,000 of these workers will be available locally. The majority will have to be supplied from outside sources. The report notes that tight housing conditions have tended to discourage both voluntary in-migration and out-of-area recruitment. Manufacturing employment in Hartford, Connecticut, has increased more than 25 per cent in the last year and a further expansion of similar magnitude is expected in the coming year. This, when compared to the very low unemployment rate, will necessitate a further influx of workers to the area. In Indianapolis, a labor need of over 10,000 additional workers is estimated, of which only around 8,000 are expected to be available locally. In the San Diego area, where a tremendous increase in employment has resulted from expansion of naval activities and of aircraft production, a critical shortage of labor is being experienced. The report states that "immigrants began to come into the area almost as soon as defense-job opportunities materialized. However, not until recently, after local labor supplies had been so greatly reduced, did the immigrant flow become essential to meet production schedules. During the spring, immigrants began to constitute a very significant proportion of workers hired." It is expected that the additional labor requirements of some 6,000 workers will have to be met through in-migration.

With the rapid expansion of labor requirements in Wichita, Kansas, the local labor force has been almost entirely depleted. In the last few months, nearly half of all the new workers hired by Aircraft plants were in-migrants to the area, a trend which is being discouraged by the limited housing supply.

Expansion of defense industries, and in particular, aircraft companies, in the Wichita area, combined with the establishment by the Air Force of a $37.5 million base there, has brought Wichita face to face with problems of adjustment, according to "A Bigger Boom for Wichita," in Business Week, February 10, 1951. An increase in the population of 50% is expected in the next two years. Although $28 million worth of building permits were issued in 1950, the rapid population increase has meant a housing shortage with rising rents. Schools are operating on three shifts, and the Superintendent of Schools has estimated that it would take several million dollars to construct class rooms for children of new war workers, to say nothing of the children of the 6,500 Air Force personnel which the Air Force Base will bring. Telephones and parking places are almost impossible to get and municipal services are sorely overtaxed.

Paducah, Kentucky, in 1940, had a population of some 34,000 and was primarily a commercial center for a rural hinterland. Because of its accessibility to concentrations of electric power and because a large tract there was partially government-owned, a site 15 miles north of the city was selected for a $50 million
gaseous diffusion plant to be built by the Atomic Energy Commission. Because of the tremendous requirements for electrical power, two large steam plants, one built by the Tennessee Valley Authority and the other built by Electric Energy, Inc., are going up. Although permanent employment at the Paducah Atomic Energy installation is not expected to exceed 1,600, during the peak construction period 12,000 workers will be required. The two power plants which are going up to supply the AEC installation with power will employ several thousand workers when in full operation. Several other industrial firms are locating plants in the Paducah area and several local companies are expanding their plants. According to an account in Business Week, July 7, 1951 entitled, "Paducah Gets in Lineup of Atomic Energy Boom Towns," the traffic problem is already quite severe. Despite the fact that 60% of the construction workers are either local residents or people living within commuting distance (up to about 25 miles away), the housing problem has also become severe. About a thousand of the AEC construction workers live in trailers. Land and property values have shot up, and, according to this account, in many cases have doubled or tripled since the first of the year. Although Paducah's people are taking in roomers, apartments and houses are completely unavailable. Other commercial establishments have felt the reaction to the wages being paid construction workers. Many residents have joined the construction crew, leaving many service and commercial establishments short-handed. Because of the influx of migrant construction workers, the schools have become overcrowded, with 45 to 60 students in a class room designed for 25. Officials expect even more overcrowding in the next month or so.

Evaluation of Current Experience

It is still too early to really evaluate whether we have been able to meet expansion crises with greater foresight this time. After a rapid survey of what small communities are doing to adjust to defense expansion, Business Week in "Seams Burst in Little Boom Towns," levelled the following indictment:

"In some towns, the business and civic leaders have got together in an earnest, cooperative effort to do something fast about the town's problems. In others - perhaps the majority - the efforts that are being made are slip shod, hit-or-miss, completely uncoordinated."

It is in the hopes of offering a guide to coordinated planning for large-scale industrial expansion - whether due to defense or to industrial relocation - that the following analysis and planning program is offered.

Generalized Pattern of Community Change Due to Industrial Expansion

In order to follow the sequence of events which may occur when a large industrial plant decides to locate in a small community, let us take a hypothetical case of a small town of 2,000 persons, engaged primarily in servicing a rural hinterland. The town has several small industries, perhaps grain storage, canning factories and the like. The average age of the population is higher than the national average since it is the home of many retired farmers and since many
younger adults have left the town to seek economic opportunities in larger cities. There is a high percentage of both home ownership and church participation. The town's layout is simple, bisected by a two-lane "highway" which serves as the main street. It is primarily lineal with the dozen or so commercial establishments located along Main Street and the residences located behind the stores for a depth of a few blocks. An industry which will employ a labor force of some 1,000 workers announces plans to locate in the community.

Although we have chosen this type of community for our hypothetical case, the events which will occur will be similar in any community facing a proportionate increase in economic base and population. A larger community may face these increases fortified by better legislative and planning preparedness, but regardless of its sounder initial position, it will face similar crises.

The first consideration of the town should be, "Do we want this industry?" Although the temptation is to say "yes," some consideration should be given to the possibility that the installation will be a temporary one and that the town may face serious problems later if the industry closes. If, however, the town agrees to the location of the industry, the community enters the pre-construction.

Pre-Construction Period

In anticipation of the increased economic prosperity of the area and the increased demand for housing and business sites, a rise in the rate of real estate transfers will occur, accompanied by a rise in land values, especially near the site of the new plant and along the highways leading to it. In a community where planning is absent, little thought will be given to controlling future development; energy will probably be concentrated upon anticipation of the economic boom. In a community concerned with planning the future pattern, the following activities should be undertaken at this stage.

First, there will be a need for a community inventory to determine what resources the community has available to meet the expanding requirements of the ensuing period. An outline of the types of information which might be included in such a community inventory is given at the end of this report. Not only will a knowledge of the capacity of various community facilities and services be of great importance in the initial stage prior to expansion, but also, an estimate of the future population, both during the construction phase and the later period of permanent employment will be essential. An outline of procedure for estimating population changes in the community and the resulting demand for facilities is also given below. By an early comparison between the resources of the community and the demand which will be generated by the new population, the areas of maladjustment and crisis may be spotted in advance. Early efforts to reduce the discrepancies between existing community facilities and future requirements will do much to avoid the chaos witnessed in the towns described above. Of primary importance at this stage is the estimate of future permanent population, since all additions to the housing supply of a permanent nature, additions to the capacity of utility systems, educational institutions, recreational and commercial facilities and so forth should
be planned on the basis of the eventual population, and with only passing reference to the population during the peak construction period. However, if expansion of facilities is undertaken early enough, the extreme shortages during the construction period may be eased considerably.

In addition to the commencement of planning studies and programs for housing and capital improvements, programs of a legislative nature should also be undertaken during the preconstruction period. The community may lack a zoning ordinance or may have one incapable of coping with an expansion of the dimensions anticipated. Prior to the completion of a land use survey of a detailed nature and the development of a land use plan upon which to base a final zoning ordinance, the passage of an interim zoning ordinance may be desirable. In its minimum form, this interim zoning ordinance should establish rough boundaries for zones of residential, commercial, industrial and possibly agricultural use, and establish certain basic standards and requirements. An interim zoning ordinance which freezes all construction except residential, which is the traditional type of interim ordinance, is inadequate in most situations, and is even less adequate during a period of rapid change and extensive construction activity. In addition to a zoning ordinance, the community will require a set of subdivision regulations to guide the development of new areas and a general street pattern in order to correlate the various subdivision plans submitted. Another set of regulations which will be required will be a simplified building code, and, also, there will probably be a need for a revision of the health and sanitation codes. If such regulations already exist, they should be examined critically, since the acceptable standards for a densely developed "urban" community will differ drastically from those permissible in a sparsely settled rural area.

In all probability, the population, at least during the construction period, will be too large to be adequately accommodated in existing or newly-built permanent housing. The gap will be filled by trailers, temporary structures, conversions, and makeshift dwellings. It is essential that regulations governing these forms of housing be drawn up prior to the construction period, to prevent haphazard location, construction and use. Almost every community will need an adequate trailer ordinance establishing the permitted location for such uses and standards of density, sanitation and improvement for trailer camps. Standards for temporary housing and conversions will also have to be worked out. Another measure which might be instituted is some control over the taking in of roomers, both in terms of density and rent limitation. During the last war, a great many communities faced with defense worker influx amended their zoning ordinances to allow a more intensive use of housing for the duration of the emergency. For example, Berkeley, California, authorized temporary permits for certain nonconforming uses to provide additional living quarters, with the understanding that, when the emergency was over, the properties would be reconverted to conforming uses. Both Portland, Maine, and Detroit, Michigan, amended their ordinances to permit for the duration roomers in residential zones from which they had previously been excluded. If such relaxations are to be permitted, realistic standards must be imposed. Makeshift housing may be regulated through the building code and through regulation of the moving of buildings, or through special ordinance.
The other major planning activity which should be undertaken during the pre-construction period is an analysis of the financial position of the community and the drafting of a tentative capital improvement budget for the provision of required public improvements and enlargement of inadequate systems. Among those community facilities which will undoubtedly require large expenditures during the early stages of expansion are water supply and treatment, sewage disposal and refuse collection and disposal. Some communities may be lacking in even basic information concerning their present systems. A pathetic situation was recounted in the study of Neosho, Missouri, during the last war, with one resident quoted as saying:

"Nobody knew where the water mains were. It was comical to see our boys (civic leaders) out hunting for them... One would say, 'They ought to be here,' and another, 'No - they ought to be there.' They'd argue for a while and then dig. There was no city engineer when the mains were laid out and consequently no plats or records. Old man T., who did most of the local plumbing in times past, knew, but he's in his grave now...."*

Refuse collection and disposal are often taken care of in an informal manner. Plans must be made either for municipal collection or for a contract with a private firm. Sanitation will be a major difficulty, if the experiences recounted earlier are any indication. The individual disposal system - septic tank, cesspool, etc. - may not be too inadequate when population is dispersed, but such methods of disposal may be disastrous given the new level of population density, even if the installations are in conformity with strict health standards and inspected regularly.

Other facilities which will undoubtedly require expansion later are schools, recreational facilities, and police and fire protection. In addition to these capital improvements, there will be increased expenditures due to increased municipal personnel.

Because of the anticipated heavy expenditures, consideration must be given to the problem of financing the required improvements and to the tax policies with respect to the industry and its employees. Unless the plant is located outside the town's boundaries or is granted a specific tax-exemption, the town may expect increased revenues from the tax payments to help meet the increased expenses. If, however, no income is received from the new industrial establishment, the town will be in an even more difficult situation.

In addition to income from the plant, a town may also expect increased revenues from the new commercial and residential properties constructed. However, there will undoubtedly be a time lag between the increased expenditures for capital

improvements and expanded municipal government and the collection of new taxes. In addition, since the residential property may not be expected to pay entirely for the services it receives, there may be a net loss to the city from the new construction. A hypothetical example of the straits in which a boom town may find itself is given in Richardson Wood's article "The Shambles Around the War Plant."

"One thousand new dwelling units are added to a community and are normally financed. But there is a charge on the city of $1,000 a unit for roads, pavements, and water and sewer connections on the site. $1,000,000 there. Then the sewage disposal plant must be enlarged - half a million dollars. Water systems, ditto. Suppose that is all except a new school at half a million, and more teachers, police and firemen - that may be $150,000 a year. If the city can borrow at 3% and amortize at 5%, it will need $200,000 a year for debt service, plus the new payroll, or $350,000 a year in all. But the new development is assessed at $10 million ($10 thousand per unit) and the city tax rate is 2% on 80% of that figure, or $160,000, less than half of what is needed. Moreover, the city's debt limit is 10% of assessed value, and it is up to its limit already. So it can borrow only a million more, not the two and one-half million it needs, but cannot service anyhow. This is where the Federal Government gets a distress call."

Before calling for federal assistance, however, there are several potential sources of revenue which might be considered. It would be very helpful if a reassessment of property values could be undertaken if not in the preconstruction period, early in the construction phase. However, too much hope should not be placed in this method of solving the financial difficulties. Even if reassessment is possible, it must be remembered that there will be a time-lag of at least a year between the new level of assessment and the collection of taxes based on this assessment. And, there may be barriers to reassessment in itself. The raising of assessments is not a politically popular program and the local leaders and the assessors may be unwilling to undertake it. Reassessment is particularly difficult with respect to old property. Also, it is difficult if not impossible to estimate accurately the magnitude of increased value. In many states, there are laws which regulate the periodicity of reassessment and these may prevent such a program at a time when required.

Other sources of local revenue which might be tapped are: service charges for utility installations and servicing (especially levied against residents of trailer camps who otherwise might escape payment for this); license fees for the operation of trailer camps; taverns and other special businesses or occupations; increased fees for building permits, occupancy permits, plumbing and electrical permits; increased traffic fines; school tuition for non-resident pupils; and employment income taxes. Increased state grant-in-aids may also alleviate the

situation. The possibility of obtaining revenue from the above-listed sources will of course depend upon the state legislation with respect to municipal finance powers.

The need for revenues from these and other sources will be even greater if the industry is tax-exempt by reason of government ownership. Although many government installations make payments in lieu of taxes, they are not required by law to do so. A bill presently before Congress would require such payments, but, as yet, this has not been passed.

No matter how complex the problems of financing improvements in the community in which the new plant is located, these problems are dwarfed by those which must be met in neighboring areas which do not receive taxes from the industry but must meet the costs of increased facilities and services required by their expanded population. Although there is no simple solution to this dilemma, several possibilities should be investigated. A reallocation of state-collected monies may be necessary to assist these communities which bear the burden of increased population without increased revenues. County-wide tax collection may be another alternative, with a concomitant program of just apportionment. The dilemma is, however, far from solved in fiscal theory.

Since recourse to federal aid will be unavoidable in many cases, early liaison with the proper agents of the federal government will be necessary. Some of the assistance available has been outlined above.

The Construction Phase

With the arrival of the construction crew, the first tangible straining of community facilities will appear. Not all of the construction crew, however, will consist of migrant workers. Some may be recruited from amongst the residents of the town. Higher wages in the construction industry may attract labor from the smaller industries and commercial establishments in town and from the farms in the vicinity. Local business may face a labor shortage as wages are bid upwards. Other construction workers will be recruited from neighboring areas who will continue to reside in their original homes, commuting to work. This will mean an increased traffic load on existing roads and the increased need for parking facilities near the construction site. In the situation we have described, it is extremely unlikely that the construction labor needs will be met from the local labor pool. Migratory construction workers will be needed. In order to estimate the number of new workers which will be attracted to the area, it will be necessary to estimate the available labor pool within the area and compare this with the estimated need for construction labor at various periods.

Since long-range planning will be done with the permanent employment force in mind and not the temporary construction force, a comparison between the two must be made in advance. The ratio of construction workers to permanent employees cannot be generalized for very obvious reasons. First, the size of the construction force required will be dependent upon the rate of construction, the type of
machines used, the type of plant to be constructed, the building material, the complexity of design and many other variables. We may perhaps be justified in stating that the construction force will be at least twice as large as the permanent operating force. (Some dramatic ratios are found in Savannah River, where the construction force at peak will be more than seven times the size of the permanent staff, and in Paducah, Kentucky, where the peak construction force will be about seven times as large as the eventual labor force.)

The need for community facilities will depend, not only upon the size of the construction force and the percentage which will be recruited from outside the area, but will also depend upon the percentage of migratory workers bringing families with them and the size of these families. With reference to this, it should be noted that skilled workers tend to bring their families with them more than unskilled, and that this practice is becoming more common. No detailed estimate can be made a priori concerning the percentage bringing families since this will be determined, in part, by the presence of housing and community services. One may have to face the dilemma that, the more facilities provided, the greater the total population, which in turn, may render even these increased facilities inadequate.

In the housing situation, the following sequence of events may be expected. First, vacant dwelling units in the community will be brought into use. Secondly, there will be a doubling up of families and in general a more intensive use of existing structures through conversions and the institution of rooming houses. Similar occurrences may be expected in other communities within commuting distance of the installation.

It is difficult to predict the extent of the commuting area. Distances of from 25 to 40 miles have been used in estimates. However, as pointed out in the PLANNING ADVISORY SERVICE bulletin on "The Journey to Work" (May, 1951), there are more variables than distance to be considered. A maximum distance of one hour by car may be used to delimit in rough fashion the commuting range, unless unusual factors are present. In the initial stage, the effective commuting range may be far greater than the figures given above. For example, it was reported in the New York Times of June 3, 1951, that workers in the Atomic Energy plant near Idaho Falls, Idaho, have been commuting from places within a 70-mile radius of the installation, a distance far in excess of what students of the journey to work would reasonably expect.

In most cases, no matter how intensively existing housing is used, there will be a demand for additional housing, met to a large extent by trailers. Other forms of temporary housing and demountables may also be required. And, because of the competition for housing, rents may be expected to increase, unless radically controlled. One may expect an increase in the construction of rental and sale housing, although if it is felt that the need is temporary, builders will be reluctant to proceed. This has happened in several of the "critical defense areas" where private enterprise has not reacted favorably, even to the relaxation of credit restrictions. A shortage of mortgage money has been blamed in certain areas. However, if new new housing is constructed, this will have the unsought-for effect of bringing still
more people into the area, since construction workers will be needed.

Another secondary effect on population and thus demand for facilities will be brought about through an increased demand for commodities and services, which will require additional personnel. Commercial and service establishments will expand in differing amounts, with the largest increases in the restaurants, package-liquor stores, taverns, movies, bowling alleys and other places of amusement and recreation, work clothing stores and the like.

If the following have not already been undertaken during the first or preconstruction period, they should be started by the construction period. First, the need for some form of roadside control will become obvious during the construction period, and the community will want to control the location of commercial establishments along the highway, perhaps limit access to the highway which will probably be highly congested by this time, and impose restrictions upon advertising signs and billboards. Setback regulations may also be desirable since, if the road congestion continues throughout the period of permanent operation of the plant, a widening of the highway may be necessary. Traffic control and a traffic code regulating parking and traffic movement and establishing penalties for violation should also be instituted by this time. Another planning activity which should be started is a citizens' planning council of some sort. Although perhaps this ought to be encouraged even before the construction period, there is a danger that if begun too early, it will be representative only of the older residents of the community who may then feel their position jeopardized later when an attempt is made to enlist support from the industry management and the new residents who have come to work in the plant. This is a highly complex and sensitive problem, and no general rule can be given for when to stimulate community organization. It will depend upon an intuitive insight into the individual community.

The Period of Permanent Employment

Gradually, the temporary construction workers will leave as the plant is completed and the permanent employees of the plant will arrive. Some of the construction force will remain on at regular industrial jobs and many local workers will transfer from construction to plant employment. Since the permanent employment force will be smaller than the peak construction force, there will probably be a net population loss in the community at this time, but a stabilization of population at a level higher than the preconstruction period.

As time goes by, one may expect less commuting, more laborers bringing families with them, and more workers seeking permanent shelter in preference to trailer accommodations. The average age of the community will be lower now, since the selective forces in migration tend to make younger workers more mobile. There will be a bimodal population distribution with groupings at the young adult ages and at the older ages. Although in the initial stages of operation, there may be a fairly high proportion of young single males, after several years of operation, it may be expected that the ratio of men to women in the community will equalize and the number of "normal" family groups will increase.
The birth rate in the community will be extremely high and the number of children will increase rapidly, if previous experience may be trusted. It will be very high for two reasons: first, because of the concentration of persons in the child-bearing ages, even if the age-specific fertility rate is no greater than average, the total birth rate will be higher than in a population with a more normal age distribution; and secondly, because the age-specific fertility rates will probably be higher than average, due to the increased economic security which may lead many families to have deferred children or to group children more closely together. In Oak Ridge and in Richland, two of the government AEC towns, fertility rates soared far above even the highest estimates made by planners. Although this phenomenon really remains unexplained, town officials and planners have tended to account for it by economic security and isolated location.*

The death rate of the community, on the other hand, although it will decrease, will not be affected too much immediately. However, as the older residents (grouped as they will be in the older age levels) diminish as a proportion of the population through deaths, the death rate may be expected to drop rapidly. Since the deaths in any community come from two major sources - mortality in the older age groups and infant mortality - the death rate of the community will depend in part upon the types of health services available to children and pregnant women. Another dramatic population fact of the atomic energy towns is their remarkably low death rate.

The composition of the population and these dynamics of population change will have very marked effects upon the types of planning which will be needed in the community during the period of permanent employment. One fairly obvious effect will be an increased demand for school facilities. This demand will be of a peculiar nature, however. With the population primarily in the child-bearing ages at the same time, the children will be concentrated at one general age level. This will mean that the peak requirements in the school system will progress with the years, will be felt first in the elementary school and then in the high school, and later, unless young family groups continue to migrate to the area, there will be a lull in the demand for school facilities. Thus, there will be a need for a flexible school system which will expand to meet the peak demands but also be capable of readjusting to a much lower level of demand, when the children have matured. There are many other implications of this population composition which might be mentioned, but which may be deduced logically.

A Check List of Important Planning Considerations

As a summary of information required for planning, procedure for population estimation, and programs for planning activities, the following check lists are offered.

* A birth rate is \[ \frac{\text{no. of births in community during given time period}}{\text{total population of community at midpoint of period}} \times 1000 \]

A fertility rate is \[ \frac{\text{no. of children born to mothers in age group during period}}{\text{no. of women in age group at midpoint of time period}} \times 1000 \]
COMMUNITY INVENTORY

Housing - present
  Number of dwelling units available without conversion of structure
  Distribution of dwelling units by size of unit, number of rooms
  Occupancy status of dwelling units; vacancy ratio; characteristics of vacant
  units - location, size, condition, tenure, rent

Housing - potential
  Estimate of number of roomers which could be accommodated in existing
  dwelling units
  Estimate of dwelling units which could be obtained through conversion of
  structure, given a minimum standard of adequacy in terms of space,
  sanitary facilities, etc.
  Estimate of dwelling units which would be supplied by private enterprise at
  various selling prices; i.e. supply schedule

Commercial Establishments - present
  Commercial establishments by type of commodity offered
  Number
  Volume of business
  Size of plant
  Number of persons employed
  Parking spaces available

Commercial Establishments - potential
  Expansion potential of commercial establishments
  Within existing plant and same number of employees
  With existing plant but more employees
  Number of additional commercial establishments
  Land available for commercial expansion by area and location

Industry - present
  Enumeration of industry by type, area, number of employees, value added.
  New large industrial firm - characteristics, labor force, land requirements,
  traffic generation, nuisance characteristics

Industry - potential
  Other industries contemplating location in community by type and require-
  ments - land, labor, power, traffic generation, nuisance characteristics
  If large installation temporary, other industrial prospects for the community

Land Use
  Present use of land
  Land use plan for future expansion - delimitation of areas suitable for
  residential, commercial, industrial, agricultural, public use

School Facilities - present
  Number of students enrolled
  Number of classrooms in existing school plant; seating capacity; playground
  facilities; other facilities, such as auditorium, gymnasium, special
  equipment such as machine shop, cooking equipment, etc.
  Ratio of enrollment to capacity.

School Facilities - potential
  Expansion capacity with additional teachers
  Expansion capacity with use of additional available structures
Hospital Facilities and Health Services
   Bed-capacity and services offered in local hospital or clinic
   Bed-capacity and services offered by other institutions in the region
   Capacity in relation to use - over-used, under-used
   Number of physicians in town, in region
   Expansion potential achievable through additional doctors and nurses

Water Supply
   Source of present supply; capacity, gallons per day; per capita consumption
   Expansion potential of present source of supply; with and without additional pumping equipment
   Possible other sources of supply, capacity
   Water treatment

Sewer System
   Present method of sewage disposal
      septic tanks, privies, length and capacity of sewers, presence of stream pollution, other health hazards
   Expansion of sewer lines
   Capacity of treatment plant if any; expansion capacity

Garbage and Refuse Disposal
   Present method - land fill, commercial contract, dumps, incinerator, etc.
   Possibility of expanding present system
   Other possible methods of disposal and treatment

Administrative and Governmental Functions
   Police protection - size of police force, jail, court house, etc.
   Fire protection - size of fire fighting force, full-time or volunteer; fire fighting equipment - number of trucks, hose, hydrants, coverage of areas of community, outside service to fringe residents
   Health department - size; health code; sanitary regulations, etc.
   Building department - inspection; size of staff; building code
   Plumbing code; electrical code
   Town government - full-time employees; government structure
   Planning commission
   Zoning ordinance; roadside zoning - adequate
   Subdivision regulations - adequate
   Regulations for trailers and temporary housing - adequate

Fiscal
   Revenue from property tax; state aids, etc.
      Level of assessment valuation
   Present tax rate
      Limitation of tax rate by law
   Debt limit and present indebtedness
   Present expenditures in detail by function
   Potential sources of additional income
      State aids
      Federal grants-in-aid
      Increased assessment or tax rate or both
      Utility and service charges
      Traffic lines
      Liquor tax; licenses
   Procedure for capital budgeting
POPULATION ESTIMATES

Preconstruction Period
Population of the community, broken down by age, sex, occupation, income, family size; population characteristics of area within commuting range of installation

Construction Period
Construction labor requirements by month (or smaller breakdown if necessary)
Estimate of labor force recruitable within town; recruitable from area in commuting range
Estimate of labor force which will have to be brought in from outside - migratory labor
Of migratory labor force:
  Percentage bringing families with them
  Schedule of family size of workers bringing families with them
    Potential number of secondary workers - wives, older children
    Estimated number of school-age children by age
    Family size of completed families (wife over fertility period)
Given new population level, estimated secondary labor force generated by new population - commercial, industrial, construction labor force
  Per cent of new labor requirement recruited from town and surrounding areas
  Per cent recruited from outside
    Proportion bring families and characteristics of family and family-members

Permanent Employment Period
Size of operating force for new industry and ancillary industrial establishments
Estimated number of employees supplied from local sources (original town population, surrounding area population, construction force population)
Estimate of total number of workers in excess of those supplied from original town and surrounding area population
Characteristics of workers recruited from outside area
  Family size - distribution in terms of family cycle; eg. newly married, 0 children; married, initial phase of child-raising, incomplete family; married, family completed
  Payroll of plant - proportion to residents of town; proportion to commuters from other areas
Schedule of expenditures
Demand for commercial goods, services, municipal services, housing, etc.
  based upon schedule of expenditures and population
Labor force requirement generated by this demand x family size
Additional labor force requirements generated by service personnel and families x family size
Total population of town and region
Municipal Services and Facility - needs generated by new population level.
Population Projection

CHECKLIST OF PLANNING ACTIVITY

Creation of Planning Commission
Permanent technical staff - consultant
Tapping of other governmental and institutional resources
   Universities
   Federal government
   State departments and State Planning Board
   United Community Defense Services
   Etc.
Community organization in support of planning
Intergovernmental cooperation and liaison
Planning programs
   Base maps and land use survey
   Land use plan
   Economic base study; community inventory study; population study
   Capital improvement budget
Drafting of ordinances
   Interim zoning ordinance
   Final zoning ordinance
   Subdivision regulations
   Trailer ordinance - temporary housing regulations
   Building, health and sanitation codes
   Roadside control measures
Other Administrative Actions
   Rent control
   Inspection
   Enforcement
A SELECTED BIBLIOGRAPHY

GENERAL


AN ACT IN RELATION TO DEFENSE COMMUNITIES, AND MAKING AN APPROPRIATION IN CONNECTION THEREWITH. (Draft of March, 1951.) Citizens' Union, 41 Park Row, New York. Unpaged, mimeo.

BIG INDUSTRY MOVES TO THE COUNTRY. Architectural Forum, July, 1951, pp. 144-151.


FINANCING PUBLIC WORKS IN DEFENSE AREAS. Public Works Engineers' Newsletter. July, 1940.
GEORGIA'S 1948 INDUSTRIES CONTINUE TO LOCATE IN SMALL TOWNS. Industrial Newsletter, prepared by the Agricultural and Industrial Development Board of Georgia. August, 1948. 4pp.


HOUSING FOR DEFENSE; A REVIEW OF THE ROLE OF HOUSING IN RELATION TO AMERICA'S DEFENSE AND A PROGRAM FOR ACTION. The Factual Findings by Miles L. Coles; The Program by the Housing Committee. The Twentieth Century Fund. New York. 1940. 198pp. $1.50.


OFFICE DECENTRALIZATION; A CHALLENGE THE CENTRAL CITY MUST MEET. Urban Land, October, 1950. p. 3.

OFFICES MOVE TO SUBURBS. Business Week, March 17, 1951. pp. 79-84.

ONE YEAR'S EXPERIENCE OF AMERICAN CITIES AT WAR. National Institute of Municipal Law Officers, 730 Jackson Place, N. W., Washington, D. C. December, 1942. 104pp. $3.00.


CASE STUDIES


BRIDGEPORT IS A BOOM TOWN WITHOUT A BOOM-TOWN PSYCHOLOGY. Fortune Magazine, September, 1941. pp. 87-92, 156, 158-162.


PORTSMOUTH AND NATIONAL DEFENSE. A series of articles reprinted from The Portsmouth Herald, Portsmouth, New Hampshire. J. D. Hartford, publisher. August 1, 1941. 95pp.


RICHLAND, WASHINGTON, UNIQUE CITY WITH UNIQUE PROBLEMS. Western City. January, 1951. p. 35.

RICHMOND - THEN AND NOW. Richmond Chamber of Commerce, Richmond, California. December 12, 1945, unpaged, illus.

SEAMS BURST IN LITTLE BOOM TOWNS. Business Week. October 13, 1951. pp. 70-73, 74, 76, 78, 80-82.


From the Library of
AMERICAN SOCIETY OF PLANNING OFFICIALS