Manufactural Geography of East Chicago-Whiting, Indiana (A Study in Geographic Rehabilitation)

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This study is one of a continuing series of industrial community geographic surveys of the Calumet region of northwest Indiana and northeast Illinois, of which already four have been published—those of Michigan City, LaPorte, Gary, and Chicago Heights. The objective is to review and evaluate the salient historical geographic forces which enter into the development of the manufactural pattern, such as elements of settlement, locative factors, transportation facilities, sources of raw materials, markets, and zoning-planning of industrial land. Appraisal of actual and potential manufactural resources is based on questionnaire and interview data and field mapping.

The contiguous cities of East Chicago (pop. 57,669) and Whiting (pop. 8,137) form a compact industrial unit fronting on Lake Michigan and focused on Indiana Harbor and its ship canal (1). Whiting is primarily a petroleum refining center; East Chicago dominates in primary and fabricated metals. Some three-score establishments are oriented areally to three sectors of the transportation pattern. Rapid industrial expansion and crowding of industrial sites without the benefit of a concurrent adequate zoning and planning program have resulted in widespread residential blight. The problem of providing improved living and recreational facilities in an area whose residential occupance constitutes only 11 percent of the total area of the two cities, and still provide for extra land needed for growing industries presents a challenging redevelopment project.

Historic-Geographic Perspective

This industrial community, variously characterized as "The Workshop of America, Where Rail and Water Meet," and "The Steel Capital of the World," was a relatively late comer on the Midwest manufactural scene. One of the reasons for the belated settlement and development of the area is revealed on the first maps and field notes of the Federal land survey of about the year 1830, represented in composite form in Figure 1. Here we note, among other data, "the east-west parallel sand ridges 50 links to 5 chains wide separated by narrow marshes," flanking the "Grand Callumic River," and another series of interlinear sand ridges and marshes extending northwestward to the Indiana-Illinois state line.

The West Calumet region itself, of which this area is a part, was physiographically frustrating: "The prairie was too wet to cultivate. The east-west orientation of the deep Calumet marshes made approach to Lake Michigan from the south extremely difficult. But an even greater barrier to travel headed for the lake was the east-west marshes flanking the Kankakee River immediately south of the Calumet area" (2). Normally, any enterprising community exploits available or potential navigable waterways; but the shallow, sluggish, and meandering Grand Calumet needed straightening and dredging to be of any service to East Chicago and neighboring communities. In view of the forbidding dune-marsh topography, U. S. Army engineers, as late as 1872, could not commercially justify a dredging project. However, potential navigability of waterways,

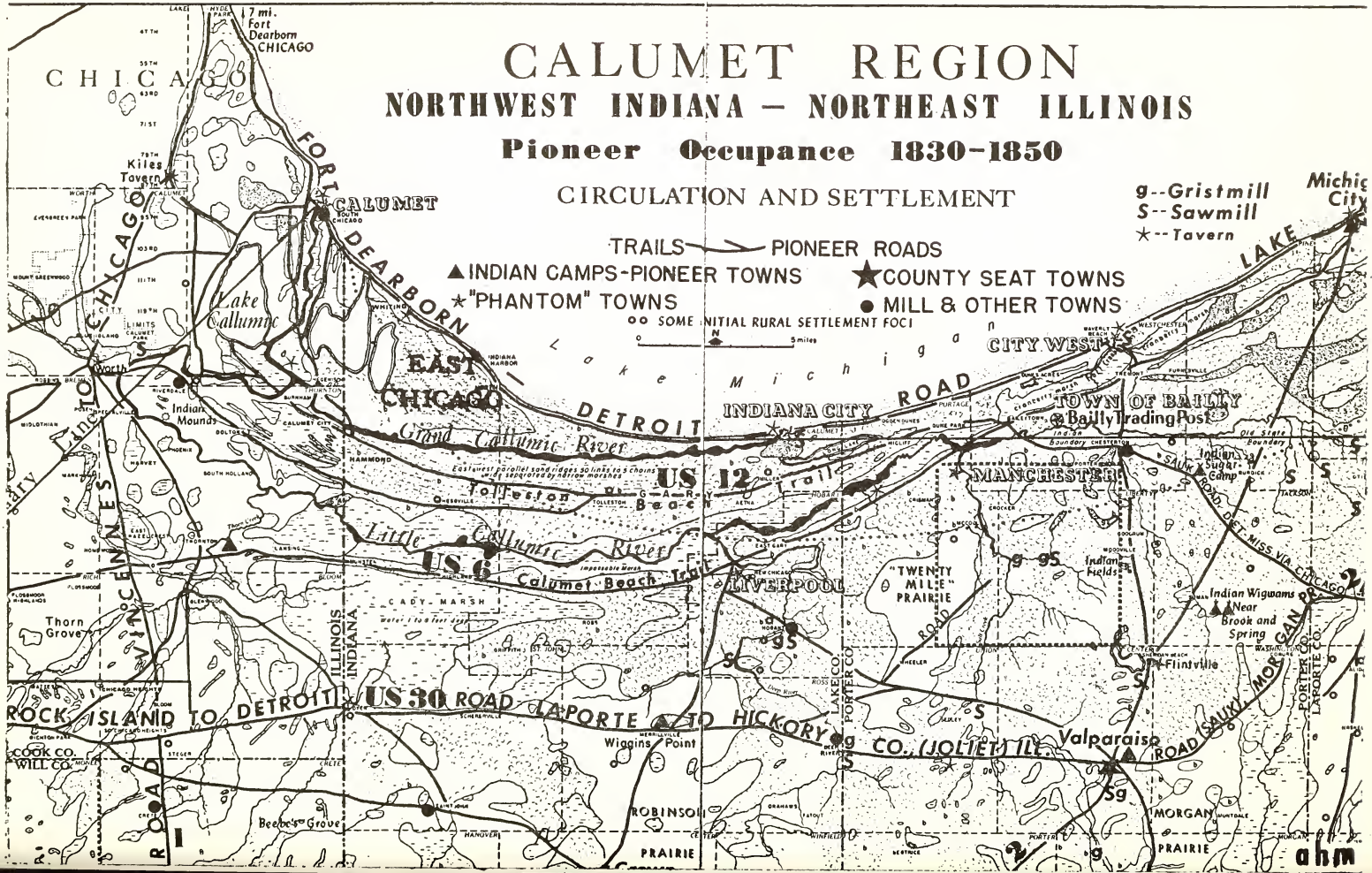

Figure 1. The East Chicago-Whiting area in Fundamental Perspective—the environmental features under Indian and pioneer white man's occupance. (From a larger Calumet regional map in Annals of the Association of American Geographers, Vol. XLVI, 1956, pp. 314-315.)

especially when the navigational pattern takes on new commercial significance, as in this instance, have a way of commanding periodic reassessment of values, as is shown in Figure 4.

Once the full import of geographic site and situation at the head of Lake Michigan and their orientation on the Chicago transportation and marketing center was realized, "waste" land took on a new geographic concept—wide open spaces, and at the price much below that of corporate communities. This might be said to have been the beginning of Midwest industrial decentralization.

The immediate antecedent events that led to the initial industrialization of the area are well described by Moore:

> The expansion of the steel industry in the Chicago area was largely responsible for the origin and development of East Chicago and Gary. This expansion was from the heart of Chicago eastward along the shore of Lake Michigan. Cheap transportation on the Great Lakes was one of the most important factors in the development of the iron and steel industry in the Calumet Region of Illinois and Indiana. The industrialists of the late nineteenth century recognized the value of the excellent facilities afforded by the numerous railroads in the region. They also saw the possibilities of harbors along the Lake for the reception of iron ore, coal, and limestone as well as for the shipment of finished products to market. Moreover, adequate sites were available for industrial purposes at reasonable prices.
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> Originally, the iron and steel industry in the Chicago area was concentrated along the Chicago River near the heart of the city. Foundries were built there as early as 1839. By the second half of the century the sites near the river were too valuable for industrial purposes. Industrialists then turned their attention to the sparsely settled region known as South Chicago. In 1870 the Federal government started the development of the South Chicago Harbor at the mouth of the Calumet River. Ten years later, the Illinois Steel Company began construction of its South Chicago Works alongside this harbor. In the beginning, the steel officials thought they had a site large enough for all time, but the erection of this great steel mill set off a boom in South Chicago which lasted for several years. Other industries located there, and part of the area was subdivided for residential purposes, with space set aside for parks and schools. As a result, land for industrial purposes became scarce and expensive. Therefore, industrialists and speculators began to seek sites across the state line in Indiana (3).

The site of East Chicago was laid out in 1887 by the Standard Steel and Iron Company; the William Graver Tank Works was the first to establish itself in the community (1888).

The Whiting community, wedged in between East Chicago, the north arm of Hammond and Lake Michigan, had its industrial inception about the same time (1889), when the Standard Oil Company erected its first unit of the now celebrated world's largest oil refinery (the 1880 census recorded a village population of only 115). Much of the same geographic advantages applied to the founding of oil refineries here as for steel in neighboring East Chicago—close to the newly developed markets of the


CHICAGO HARBOR
LAKE
CHICAGO
MICHIGAN
SOUTH BRANCH CHICAGO RIVER
CANAL
DES PLAINES RIVER
AND
SHIP
PART I
CALUMET HARBOR
PART II
INDIANA HARBOR
SAG JUNCTION
SANITARY
CALUMET
SAG
CHANNEL
LITTLE CALUMET R.
CHICAGO
PART III
LIMIT OF PROJECT MILE 327.8
LAKE CALUMET
CALUMET RIVER
LIMIT OF PROJECT MILE 334.7
EAST CHICAGO
BUFFINGTON HARBOR
CARY HARBOR
LIMIT OF PROJECT MILE 338.5
GARY
GRAND CALUMET RIVER
CALUMET RIVER
THOMAS J. O'BRIEN LOCK & DAM UNDER CONSTRUCTION
REMOVE BLUE ISLAND CONTROLLING LOCK
REPLACEMENT OF EMERGENCY DAM AUTHORIZED, NOT INITIATED
LOCKPORT LOCK
JOLIET
LIMIT OF PROJECT MILE 287.3
BRANDON ROAD LOCK
ILLINOIS WATERWAY TO MISSISSIPPI
LOCK AND CONTROLLING WORKS AUTHORIZED, NOT INITIATED
LEGEND
NO CHANNEL IMPROVEMENT REQUIRED
CHANNEL WIDENING UNDER CONSTRUCTION (PART I)
CHANNEL IMPROVEMENT AUTHORIZED NOT INITIATED, (PARTS II & III)
RAIL ROAD BRIDGE, EXISTING OR PROPOSED
HIGHWAY BRIDGE, EXISTING OR PROPOSED
EAST CHICAGO - WHITING COMMUNITY
Chicago - Calumet Steel Centers
Largest complete oil refinery in world
ILLINOIS
INDIANA
ILLINOIS WATERWAY
ILLINOIS AND INDIANA
CALUMET - SAG PROJECT
CHICAGO DISTRICT, NORTH CENTRAL DIVISION
SCALE OF MILES
MARCH 1956

Midwest; sharing the benefits of the land and water transportation facilities converging on Chicago, but without its high taxes; an abundance of water; and a large regional labor force.

How the modern industrialists themselves assess the locative factors is revealed by our questionnaire, in approximately the following order of importance: proximity to Lake Michigan (Indiana Harbor and the navigable section of the canal); railway and highway transportation facilities; markets; availability of land, and, in some instances, buildings. Other miscellaneous responses include: relatively central location in Calumet area; discovery of oil in Lima, Ohio, 1885, and in Mid-continent area, 1888; nearness to refinery and/or steel plants (symbiotic); potential marketing in Midwestern states, centering on Chicago; closeness of an unlimited supply of fresh water (Lake Michigan); and because of rejection elsewhere (Chicago did not want certain industries of suspected nuisance or hazard types).

Regional resources of raw materials, both nearby and from afar, are of particular geographic significance. As earlier indicated, the featuring manufactures of the area are identified with steel fabrications and oil refining. Raw materials of the former are primarily iron ore from the Mesabi range of Minnesota, coking coal from Kentucky, and limestone flux from Michigan. The source of raw petroleum for the latter (originally the Lima, Ohio area) is now centered on the Mid-continent field—Texas, Oklahoma, Kansas, Louisiana, and the Gulf Coastal area generally, with a limited supply also from Indiana and Illinois. More recently, Wyoming and New Mexico have been added to the list of petroleum producers for the Whiting refineries.

It is the manufactures of semi-processed materials of these two major industries which in turn supply so-called raw materials for the many satellite manufactures in the community. The neighboring Buffington area to the east is a large producer of sand, gravel, and cement. Other significant raw materials include special types of clays from South Dakota and Wyoming; gypsum from Louisiana; lead and zinc products from western United States; and asbestos from Canada.

Figure 2 is designed to show the general progress of area spread of the industrial pattern. It is noteworthy that within the short span of four decades the major pattern had been set.

The Manufactural Pattern Is One of Compactness

A survey of the distribution pattern of manufacturing establishments suggests a threefold division of the East Chicago-Whiting community (See Figure 3). The northern area *(A)*, the earliest and largest manufacturing district to be developed, is noted for heavy industries requiring expansive tracts of land and combined water and rail facilities, such as

Figure 4. The Cal-Sag Navigation Project. Within five years after completion, the channel is expected to handle an annual commercial traffic of 12 million tons; ultimately 18 million or more. On this U. S. Army Engineers map is outlined the East Chicago-Whiting area to show the geographic position it bears to Part II of the project. Note the numerous bridges that have to be reckoned with in case this part of the project materializes. Of primary concern here is how the Indiana Harbor and Ship Canal will function in supplying auxiliary traffic for the main channel.

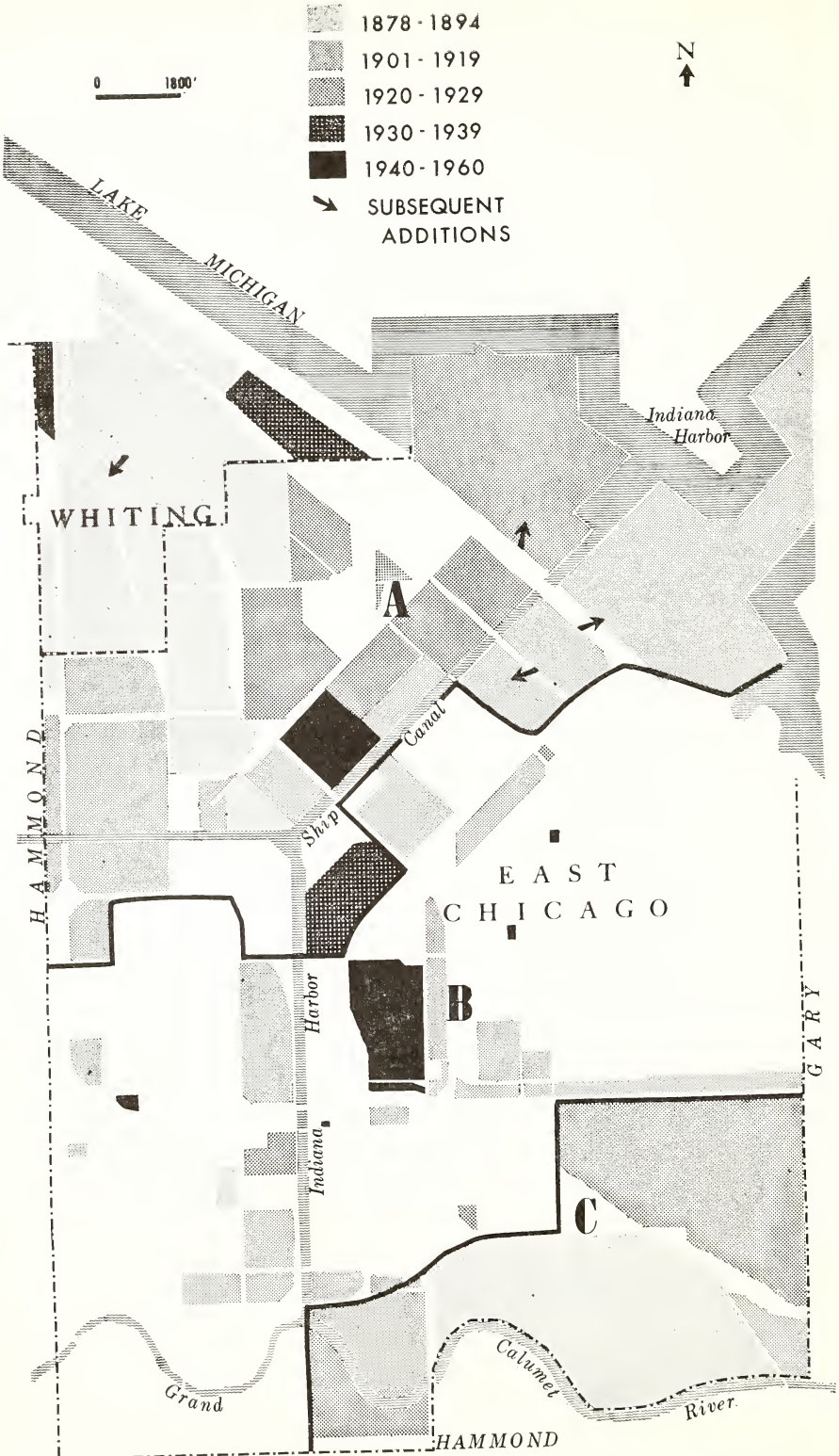


Figure 2. Periodic Industrial Occupance. Note the predominance of original site and sequent occupance in the lake section (A) and river section (C), and the generally smaller sites in the central residential section (B).

primary metals, petroleum and coal products, stone and clay, chemicals and allied products. The Standard Oil Refinery, most complete in the world, dominates the Whiting area and extensive tracts in neighboring Hammond on the west and East Chicago on the east. And Inland Steel Company and Youngstown Sheet and Tube Company have sprawled out on lakeside natural and man-made land, and the ship canal, on the east and west side, respectively.

Already at an early date it was recognized that a mushrooming industrial district, such as this, needed adequate housing for its workers. So in 1914 a steel firm, the Mark Manufacturing Company, platted and promoted the residential community denoted as Mark on the map. Completely surrounded by industrial land, "Marktown" represents the first attempt on the part of industry in the area directly to sponsor a housing project.

Section *C*—The section along Grand Calumet River is likewise identified by large individual tracts, featured by E. I. Dupont De NeMours and Company and Cities Service Oil Company, manufacturers of chemical and petroleum products, respectively. Like section *A*, it belongs to the early period of development—latter decades of the 19th century and early decades of the 20th. This area was also earlier conceived as a separate entity, being identified with the prospect of eventual conversion of this meandering, shallow, and sluggish stream into a navigable waterway connection with the Sag to the west (Figure 4). But the dream of this navigable connection is far from realization; likewise the Calumet River end of the ship canal remains undeveloped for cargo traffic. However, the new Indiana East-West Toll Road adds transportation facility to the area.

Section *B*, extending northeastward-southwestward through the heart of East Chicago, looks more like an average industrial community. Industrial sites occupy a sizeable percentage of the area, but they are much smaller, more dispersed, and diversified in character than in either of the other two sections. This is the "residential town," with its multiple commercial and civic as well as industrial functions. Three residential areas are recognized. The eastern one, the largest cohesive unit and with a prominent axial commercial core, is proximate to the chief industrial area. A second sizable residential rectangular area occupies the southwest with a commercial axis centered on the intersection of US 12-20 with Indiana 312. A smaller south-central district bounds the Calumet industrial area.

Section *B* incorporates every classification type of manufactures shown in the legend of our map. Fabrication plants (some dozen units) and allied manufactures of machinery and transportation dominate the area, benefited by the proximate position of the sources of primary steel and other raw products, and the closely knit north-south, east-west road-rail matrix of central East Chicago and its extra-regional transportation outlets.

It is this compact maze of miscellaneous industries with their complex traffic pattern, mixed with or adjoining residential neighborhoods, which challenges the urban planner for new or renewal residential sites, as well as maintaining adequate space for manufactural expansion.

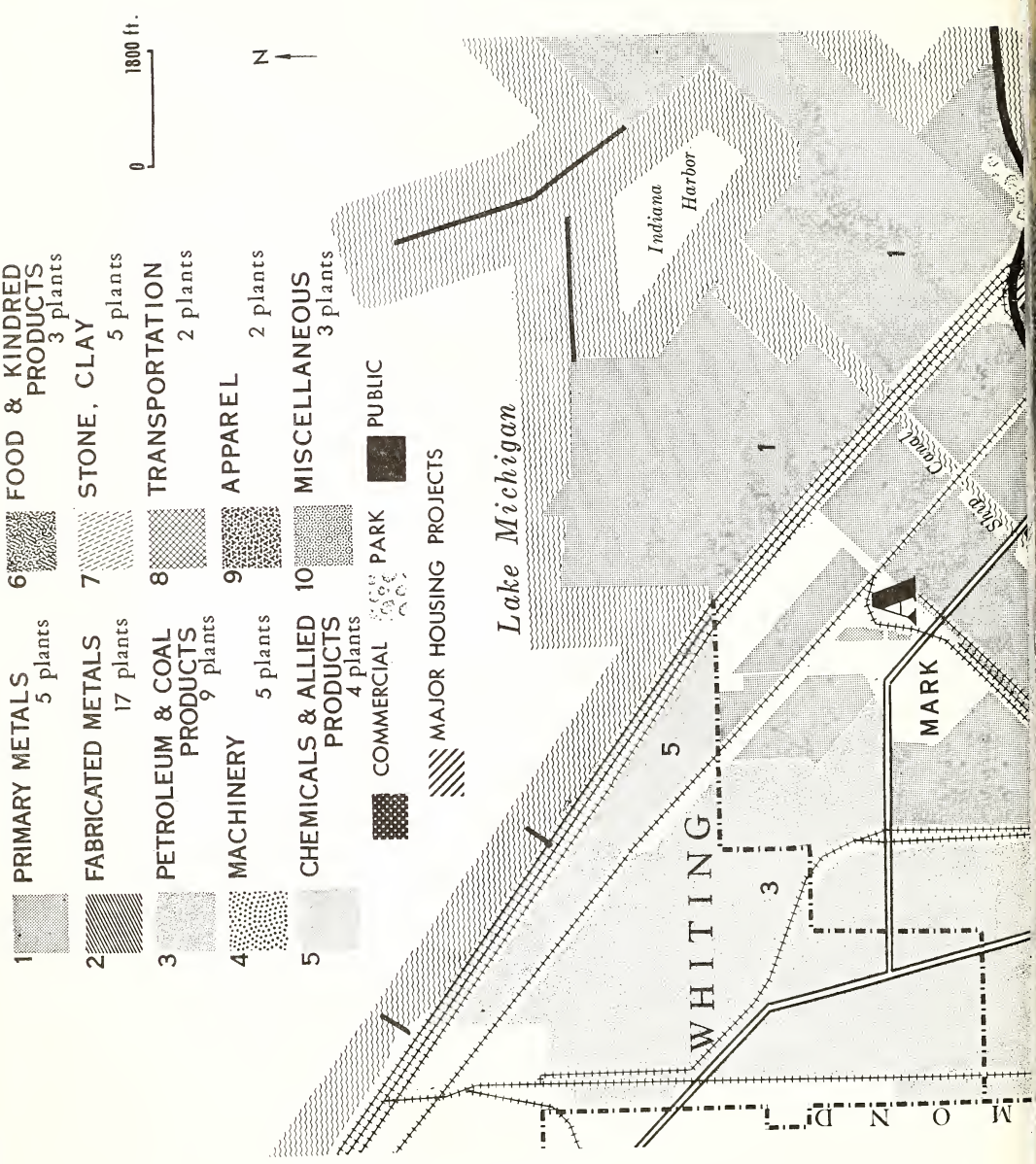
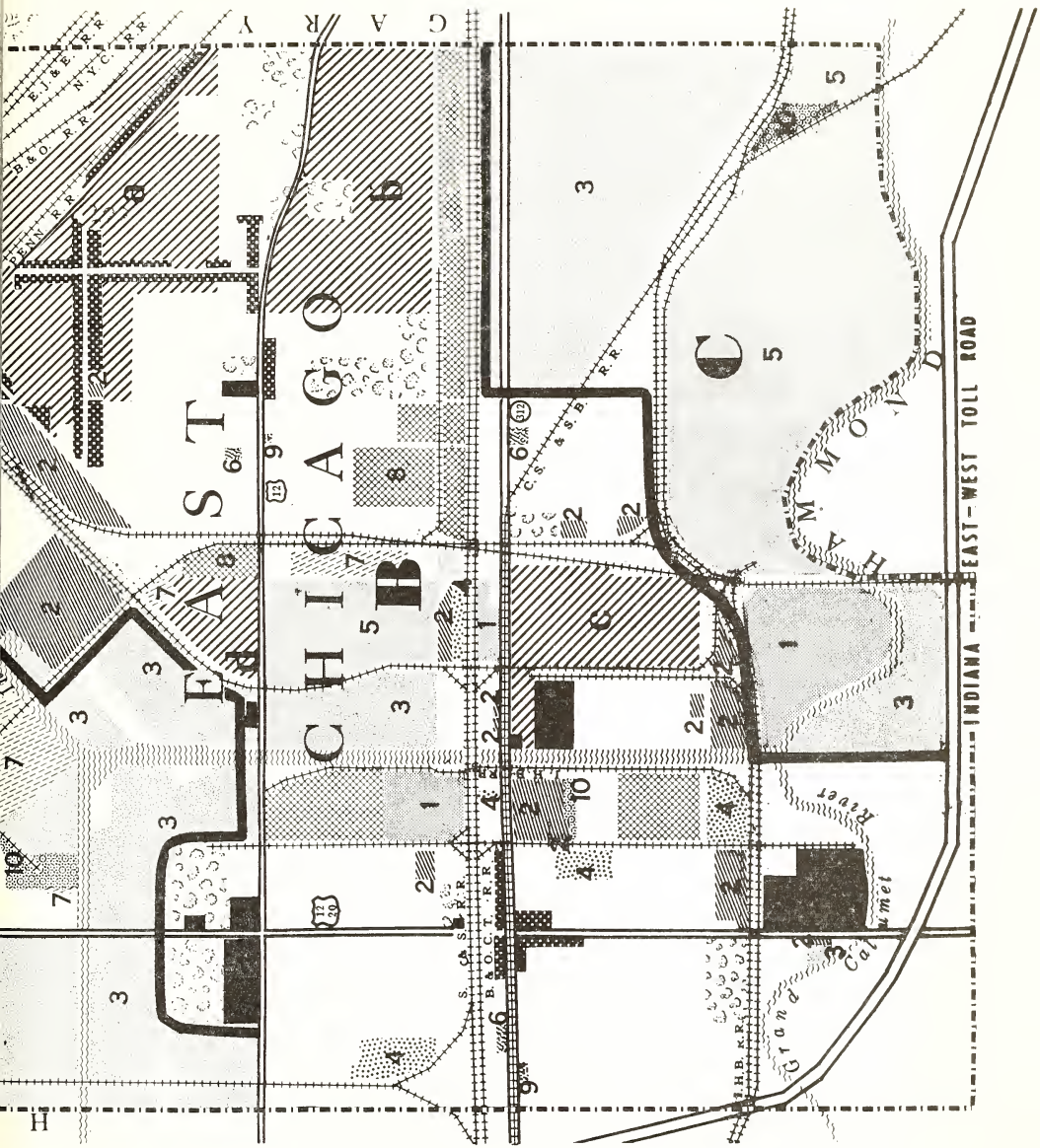


Figure 3. Manufactural Geographic Design by Industrial Classification. Predominant features exhibited are the expansive heavy industries in section A and C, the mixed heavy and light, and generally smaller industries, in section B. The lower case lettered



areas (a,b,c,d), and for the most part the blank areas (predominantly in section B) denote residence sites. The significance of the a, b, c, d, so-called "action" sites, is explained in the text.

Space Inadequacy and Areal Disunity

Such an extensive and intensive industrialization land utilization pattern as indicated in Figure 3 is self-revealing of the space problems that now beset the two communities. But if the map does not give a complete picture of the situation, questionnaire and other data are conclusive. Except for industries operating at capacity, respondents to our questionnaire repetitively reported inadequacy of amount or quality of land available for expansion. Or, if there is such a facility, it is limited to the immediate future. Although some of the industries now possess unoccupied land, extended expansion means an undesirable encroachment upon areas in immediate residential contact or with areas of other needed urban functions. Various comments indicate the types of restrictions recognized, such as "not enough area to merge two plants which is desired"; "bounded by canal, railroad, highway, another factory"; "closed in by towns—surrounded by other communities." As summarily observed: "This area is highly industrialized and populated. Additional land for expansion is very expensive and full use of land owned is not possible due to proximity to residential areas and resulting zoning restrictions placed on us by their encroachment."

The one major expansion facility, of course, is lake-fill land as in the case of the lakesited steel industry. One of the major objectives in urban renewal (to be described later) is to allocate land for industrial purposes either so originally intended, or rezone land in such a way as to relocate residents of the community so as to provide additional industrial land where such sites are more suited to industry than to other civic purposes.

Sub-nuclear urbanization and lack of an inter-community planning program resulted in other space problems. Already in the latter nineteenth century as the Chicago industrial complex came to be developed, industries were moving out of Chicago because of exorbitant corporation taxes. This and other considerations, such as vacant and cheap land of expansive proportions, led Standard Oil Company to locate in the unincorporated Whiting area. Then, when neighboring Hammond on the west pressed for annexation of the Whiting area, Standard supported a move for an independent Whiting where taxes were expected to be much lower than in heavily-indebted Hammond.

A geographic cleavage of another sort in this industrial community arose from the construction of the Indiana Harbor Ship Canal, paralleled in part by the switching yards of the Indiana Harbor Belt Line Railroad. The extension of this canal from the Harbor southward to the Grand Calumet River resulted in the concept of "Twin City": the section of East Chicago east of the canal lakeward came to be known as Indiana Harbor and the section west of the canal as East Chicago. This geographic concept has more than theoretical significance. The highway crossings of the Canal are limited to the interregional traffic congested thoroughfares (a mile to nearly two miles apart)—Indiana 912 in the north, US 12 and Indiana 312 in the center, and the Indiana East-West Toll Road on the southern boundary. This accentuates the regional separateness of the two areas. Note also on the map (Figure 3), that each community has developed a commercial core, with its own residential districts separated in part by broad industrial tracts on either side of the Canal. "The rail-

roads that pass through the eastern part of the city add to the confusion by listing their stations as Indiana Harbor. Until recent years, the telephone company identified its exchanges as East Chicago and Indiana Harbor respectively. Consequently, unity of thought and action among the citizens of the Twin City has been difficult to attain, and on many occasions sectional strife has characterized the various phases of its affairs" (4).

The "Most Pressing Industrial Problem"

Transportation facilities abound within East Chicago, yet are said to be critically inadequate. Within the city is a criss-crossing network of busy streets, railroads, highways, and the Indiana Harbor canal, navigable in its lakeward sector. Three major railroad lines traverse the city and provide freight and passenger service for the industries and its residents. And the Indiana Harbor Belt Railroad serves as a connecting link to all other railroads for the proper handling of freight cars within the city and the region.

Three major U. S. highways (Routes 12, 20, and 41) and two state highways, plus the East-West tollway, are extremely beneficial to the local industries. A newly projected highway, the Tri-State, is being developed from the east.

The Indiana Harbor Ship Canal is not only of particular importance to the local heavy industries but also ranks high in the Calumet region. According to statistics on tonnage shipped and received, the Harbor ranks 23rd in the nation. Within the conurban area of the region it ranks second to the Illinois Calumet Harbor only 12 miles to the northeast.

Because the area involves extraordinary diversity of manufactured goods, transportation facilities used are also extremely diverse. Practically every conceivable form of water, land, and air transport is used in one case or another—heavy and light trucking service, railroad boxcars and tankcars, boats and barges, pipelines and planes. Factors which influence or determine the type of transportation used are related to varying factors: differential costs; distances of source of raw materials and markets; size, weight, and bulkiness of product; convenience of handling and packaging; urgency; special physical characteristics of products requiring a particular type of handling. A major change in transportation within the last ten years is increased trucking on a large scale. Though questionnaire percentage figures are lacking comparing truck transportation with that of other forms, a greater number of manufacturers reported a change to trucking service than any other single change. Heavy and bulky products are naturally favored by rail and barge shipments. Thus, one of the industries reported its practice: "A 20,000-pound unit of purchase will go by truck; a 60,000-pound unit will go by rail." On the other hand, where time or urgency is a factor, sizable items may be shipped by plane.

Despite these widespread and varied facilities, the area of transportation is reportedly East Chicago's "most pressing problem." "While our highways in all directions are inadequate to handle the ever increasing number of employees coming into our community to work, the problem is most acute in the pitifully small number of North-South highways. Through a splendid cooperative effort between the Public Officials and the

Chambers of Commerce in this area, we at last have under construction the improvement of Cline Avenue as a limited access highway. It is scheduled for completion between Route 6 and Industrial Highway by next September. We also have developed extensive plans which are presently being considered by the State Highway Department. These involve the improvement and re-routing of State Road 912; the creation of an Alternate 912, which would involve restoration of the long time useless Canal Street bridge; the improvement of Kennedy Avenue and its connection with the proposed Alternate 912" (5).

Geographic Dispersion of the Labor Force a Distinguishing Industrial Feature

As is noted elsewhere, a large percentage of the labor force must be gotten outside the immediate area, though many industries encourage settlement within the immediate area, particularly employees of the highest skilled type, since absenteeism, hazards, or other adverse factors due to distant travelling can result in serious handicaps of industrial activity. Very few industries report that all, or nearly all, of their employees are from within the area. Such characterizations include "Calumet area," "entire area," "Lake and Cook County and Porter County." Various outside cities are mentioned, primarily Hammond on the west and Gary on the east. Several of the larger firms gave us a revealing percentage breakdown of the various outside communities represented on their labor force. Thus, for example, the following percentages: East Chicago, 46; Gary, 16; Hammond, 15; Chicago, 8; Calumet City, 2; Whiting, 2. Another respondent reported: Hammond, 34.4; East Chicago, 10.2; Whiting, 8.6; Highland, 6.6; Gary, 5.3; Munster, 3.5; Griffith, 3.3; other miscellaneous employees who live in Indiana, 8.7. From communities on the Illinois side, the following percentages: Chicago, 6.2; Calumet City, 5.4; Lansing, 5.4; Dolton, 0.8; miscellaneous, 1.6. Thus the total percentage of employees of Indiana is approximately 81, and of Illinois 19. Still another firm lists the following community figures: East Chicago, 50; Chicago, 35; Gary, 10; Hammond, Griffith, 5.

Such high percentages of non-resident laborers point to another major problem of the area, namely, inadequate housing for industrial workers. The wide open spaces of northwestern Indiana once made it possible for workers, if they so wished, to live at some distance away from the noisome gases, odors, and dust-polluted atmosphere of the refining stills and blast furnaces. However, as a result of phenomenal industrial expansion, land became progressively scarce as more and more residences came to be built privately both by industrial management as well as by workers. It was only a question, therefore, of a few decades when civic authorities as well as industries began to recognize that such proximity could result only in substandard housing and eventual "slums," similar to those that have developed elsewhere in heavily industrialized communities. The first major step to be taken by civic agencies to correct or at least check this progressive blightening influence was that of the East Chicago Chamber of Commerce, which in 1926 published a general survey of its social and economic problems (6). The purpose of this report was to present the results of a survey of the "physical, social and economic aspects" of the city, with the view of assaying the major housing and other related

problems in the community and reviewing various possible measures of improving the general living conditions of the community. Other aspects of the report deal with local marketing, transportation, recreation facilities, educational facilities, noxious elements, the ethnographic composition of the population, as well as suggestions for zoning and planning for the future. One of the unique features of this report is the distribution of a questionnaire to the citizens to determine attitudes that militated against living in the community. So one of the questions asked was, "If you do not live in East Chicago please state briefly why you do not." The answers of the 274 respondents were tabulated. While the individual answers are highly illuminative, they cannot be individually listed here. However, the report goes on to summarize the criticisms of the community, particularly as they reflect living conditions, which in tabulated form is here produced in part as follows:

Planning for the Future of East Chicago—Criticisms by Industrial Employees:

The foregoing 274 answers to Question #11 furnish 420 objections, which may be conveniently classified as follows:

SUMMARY OF CRITICISMS

	Objections		Totals	
	No.	%	No.	%
1. Housing				
Shortage of Residences	42	10.00		
Shortage of Stores and Markets	6	1.43		
Shortage of Amusements	9	2.14		
High Rents and Taxes	44	10.48	101	24.05
2. Transportation	48	11.43	48	11.43
3. Racial				
Foreigners in General	25	5.95		
Mexicans	30	7.14		
Negroes	45	10.72	100	23.81
4. Public Utilities				
Poor Water	23	5.48		
Poor Gas	4	0.95	27	6.43
5. Undesirable Conditions				
Uncleanliness	22	5.24		
Cement Dust	17	4.05		
Smoke	3	0.71	42	10.00

The remaining categories in the order of importance were: "Living Conditions Generally (8.81); Lawlessness (5.95); Poor Schools (2.38); Environment (1.90); Miscellaneous (1.90); No Restricted Districts (1.67); and Owns Property Elsewhere (1.67)."

Another questionnaire circulated by the Chamber of Commerce was directed at determining "suggestions for improvements." Again detailed responses were received and a broad classification indicated. Items concerned with building of more housing units of diverse types and the

lowering of rents were emphasized to the extent of 24.30 percent. A similar aggregate percentage was concerned with restrictions based in order of segregation of races, zoning ordinance, elimination of foreigners, and building restrictions. The third major improvement category concerned improvements in sanitation, public utilities, elimination of cement dust and smoke, as well as the planting of trees, a total of 21.77 percent. The remaining classification items stressed the elimination of lawlessness (6.48 percent), the provision for more parks and playgrounds (3.24 percent), and other miscellaneous items for a total of 3.47 percent.

In the summarization, then, it is noted that "two-fifths assigned as the reason for not living in East Chicago is the inability to secure suitable living quarters at reasonable rents or some other objection having to do with the housing situation."

Between the years 1950 and 1954 constructive action on the part of industries and the social-political forces in the city and surrounding communities stimulated the need for planning, to solve the housing and other land-use problems. For this purpose the Purdue-Calumet Development Foundation was organized.[1]

According to statistics compiled by the foundation, industrial land comprises 70.1 percent of the total land use in East Chicago and 58.3 percent in Whiting. These high percentages present many problems in relation to residential land use which occupies approximately 11 percent of the total land area in both communities, with East Chicago supporting a population of 57,669 and Whiting 8,137. As Bunsa made clear, the industrialists have become concerned about the residential blighting conditions and, incidentally, help financially to sponsor the urban redevelopment project in East Chicago.

In Figure 3 are shown the main housing developments, known as "action" areas:

> "Area *a* is officially known as the Indiana Harbor Urban Renewal Area. This area has a clearance section and a conservation section. Execution of the project after completion of planning and federal and local approvals, commenced in August, 1960.
>
> Area *b* represents the new Prairie Park subdivision to be developed by Purdue-Calumet Development Foundation for 600 middle-income homes. At this time the Foundation owns only that portion west of Alder Street, the first section of which (80 units) is now under development.

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[1]According to Mr. Thomas S. Bunsa, the General Director, the organization got its start in this manner:

"The idea of the foundation grew out of the social, economic and administrative needs of the Calumet region after World War II. Economic growth in the area brought high prosperity and a need for more and more housing to accommodate adequately a growing work force. But years of neglect, through depression and war, had produced widespread areas of blight intensified by overcrowding after the war, which continued to spread despite high prosperity. In these circumstances, people began to question whether or not better housing and living standards should not be attainable in high prosperity, and industrialists began to be concerned about the need for more and better housing and an improved environment, which they considered necessary to hold and attract the required personnel to man their expansion programs" (7).

Area *c* is the West Calumet Urban Renewal Area. Planning of this project is almost complete. Commencement of execution is anticipated sometime during late 1962. As in Area *a*, both clearance and conservation is proposed.

Area *d* is known as "New Addition." Some renewal activities are necessary here, but at this time there are no proposals for this area" (8).

Cal-Sag Project Poses a New Geographic Dimension to West Calumet Industries

Figure 4 shows three harbors on the southwest shore of Lake Michigan identified with the so-called Calumet-Sag Navigation Project—the Chicago Harbor, the Calumet Harbor, and the Indiana Harbor at East Chicago.

The project "was authorized by Congress with approval of the Rivers and Harbors Act of 1946. Its completion will join two great inland water routes, one of which leads to the Mississippi and the Gulf ports; the other through the Great Lakes and to the Atlantic ocean via the St. Lawrence Seaway. . . . Constructed primarily as a sanitation and drainage canal, it had two major purposes: to provide drainage for the south side of Chicago and to prevent pollution of Lake Michigan by reversing the flow of the Calumet River. . . . However, the original purpose for which the Channel was built has been far overshadowed by its importance to the surging need for adequate commercial navigation in this area. Bypassing the congested Chicago business district, it leads through comparatively open country to the great concentration of industry south and east of Chicago—a region in which are located numerous steel mills, oil refineries, cold storage plants, grain elevators, chemical industries, and plants allied with the heavy industries." . . . (9).

As it will also be noted on the map, the East Chicago-Whiting region is part of Part 2 of this project, involving as it does the Indiana Harbor, the Indiana Ship Canal, and the Grand Calumet River to the south. Improvements here call for deepening the Grand Calumet River from its present four feet to nine feet, and from its present width of approximately one hundred feet to 225 feet from the junction of the Grand Calumet River with the Little Calumet River to the present head of deep-draft navigation at 141st Street. A further provision calls for a lock and controlling works in the Grand Calumet River immediately west of its junction with the Indiana Harbor Canal.

As will also be noted on the map, the development of this navigation project involves expensive relocation or reconstruction of numerous bridges—both highway and railway—now without adequate vertical and horizontal clearances.

Though the Federal government is committed to the project in the main, local interests have the responsibility of cooperating in the project by providing necessary rights of way and areas for soil disposal as well as relocation or alteration of utilities affected by the channel improvement project.

Part 1 of the project, started in 1955, is scheduled for completion in 1964. Development of Part 2 is contingent upon the readiness of the local area to assume its share of contractual obligations, as indicated above.

To what extent the East Chicago area will benefit directly from the development of Part 2 together with Part 1 of the project is difficult to say. Much would depend upon the comparative developments of the three harbors indicated and the degree to which the eastern part of the Grand Calumet region would expand industrially and commercially.

Conclusion: Community Rehabilitation in Interstate Calumet Perspective

The East Chicago Chamber of Commerce report for 1926 concluded with a strong recommendation on certain principles to be observed in planning and zoning of residential, business, and industrial areas to fit the progressive needs of the community, particularly in terms of social and economic betterment. It went even so far as to suggest a change of name, partly because some eight other communities in the region already carried the appellation of Chicago, and partly because of the confusion in the minds of some that East Chicago and Indiana Harbor actually represented two different cities. Because East Chicago was recognized as being closely integrated especially in terms of transportation with the other cities of the West Calumet region, the report suggested consolidating East Chicago with the other three neighboring communities—Whiting on the northwest, Hammond on the west, and Gary on the east, with which East Chicago has "coterminal boundaries in large part."

After some thirty-five years, this time as part of the program of the Purdue-Calumet Development Foundation, the problem of co-ordination of inter-area transportation is again being considered. It is proposed that the several west Calumet communities be developed after the pattern of the PCDF for East Chicago, and that such four-area foundations be "federated into a parent Northwest Indiana Development Foundation" (10).

Mr. Applegate, executive vice president of the East Chicago Chamber of Commerce, also reports that local industries, through the Chamber of Commerce and local public officials, working with the neighboring Calumet area communities, propose the creation of a new deep water harbor—the so-called Outer Harbor Project or Tri-City Harbor. This project envisions "connecting the existing South Chicago Harbor and Indiana Harbor with a breakwater," involving also the creation of new land for port and industries. Again working with "neighbors in Indiana and Illinois," the Chamber is active in "seeking congressional appropriations to continue the Calumet-Sag Canal project eastward," as outlined previously.

Observations and proposals, such as the above, point to problems of areal development inherent in growing industrial communities where artificial corporate limits and arbitrary municipal controls operate in conflict rather than in co-ordination of area interests for the component regional communities. Urban renewal, with all that this implies in the redevelopment of the East Chicago-Whiting community, is not, then, merely a matter of internal city concern. It represents rather a geographic rehabilitation project calling for consideration of all the major natural and human environmental factors germane to the manufactural, commercial, and residential functions of the area—such as drainage, sewerage, and sanitation; the transportation and traffic patterns; the industrial expansion

potential, and labor force availability. Important as are their interrelationships within the community itself, the problems arising from such compact and complex situation as here presented must be assayed in a wider regional context than the precincts of a city boundary, or county, or even any one state. Industrial-residential blight may be primarily an internal community affair. Yet even this is normally related to a traffic pattern of inter-regional scope. And this inter-regional impact, in the case of the Calumet-Chicago area, is, of course, inter-state, involving the Illinois side as well as the Indiana component. Sound community planning for the rehabilitation and progressive development of the East Chicago-Whiting area thus involves a comprehensive geographic survey of the inter-state implications of: the projected improvements of Calumet River drainage; the eastward extension of navigability of the Cal-Sag, including the connected Indiana Harbor Ship Canal; the promotion of St. Lawrence Seaway commerce by the various ports in the southwestern Lake Michigan area, including Indiana Harbor (and any new harbors that might be projected, such as the site of the Burns Waterway); and the changing pattern of transport and traffic of the Calumet region.

But such inter-state survey, to be effective, must be implemented by proper legislation—an inter-state compact of some type. Such legislation would not only identify more clearly community problems and their regional scope of attack, but also would help eliminate some of the regional prejudices which are blind to the geographic realities that must be appraised objectively if all the industrial communities of the Calumet are to share in an expanding world market for their goods and by such industrial expansion improve as well the standard of living of their employees, whether local or regional residents.

The Calumet compact might be patterned after similar compacts operative elsewhere. For example, the Bi-State Compact of the Wabash River Valley is an agreement between the legislatures of Indiana and Illinois (January 25, 1960), approved by the Congress of the United States, to develop comprehensively the resources of the Wabash valley. To this end, the compact is directed at relating the "agricultural, industrial, commercial, recreational, transportation, development and other problems to the opportunities in the Valley" (11). Jurisdiction resides in the Wabash Valley Interstate Commission which has the responsibility of "coordinating the efforts of the local, state, and federal agencies to obtain efficient and effective development of resources for all purposes."

The virtue of a comprehensive planning pattern such as this is that it identifies the integral inter-state relations of the economic potential within the framework of the total geographic perspective.

Though the Calumet-Lake Michigan region is uniquely focused on urban-industrial-commercial resource developments, and, therefore, calls for its own distinctive regional analysis, the general principle of seeking a co-ordinated and unified regional evaluation of its problems and potentialities applies in the East Chicago-Whiting community as it does in other conurbanized areas.

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