

## A FIELD MAP FOR A GEOGRAPHIC STUDY OF AN URBAN INDUSTRIAL AREA.

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### INTRODUCTION.

The mapping of land utilization forms an important part of the study of the geography of an urban area, since without such a map it is difficult to recognize the inter-relationship between the various aspects of the cultural landscape.

This paper outlines the method which was adopted in making a detailed map of land utilization in the Calumet Industrial District, and presents some of the geographic relationships which the map brought out.

Owing to the large area covered the survey occupied several months of field work. No uniform map of a suitable scale for the whole area existed. Consequently, field observations were noted on several base maps of various scales. It was found that a scale of six inches to the mile was the most convenient to use in the field since all the facts of the cultural landscape as well as those of the natural environment could be shown thereon. Since the aim of the survey was to obtain data of land used for urban and industrial purposes, no separate map was made of the facts of the natural environment. The lack of variety in the physical make up of the area under consideration also rendered a second map unnecessary.

When the whole area had been covered in this way a generalized map was made on a scale of 1:40,000. On this fewer details could be shown, but it was possible to indicate sufficient for definite conclusions to be drawn of the various ways in which the land was being used for urban and industrial purposes, the areal distribution of each, and their relationship one to the other and to the major features of the natural environment.\*

### THE CULTURAL LANDSCAPE.

After a preliminary reconnaissance it was decided to group the various forms of land utilization under ten

\* Colored maps were used to illustrate this paper, but it was impossible to reproduce them here.

heads. A color scheme was adopted whereby the areal extent of these uses could be recorded on the maps in the field.

1. *Manufacturing Establishments* (Purple).

Since manufacturing is the most important activity in the area under consideration, its distribution is a significant feature of the cultural landscape. Only land that was actually in use for industrial purposes was colored since in some cases only part of the site was utilized.

2. *Residence Areas* (Pink).

Only those sections which were actually built up were recorded. Homes were classified by blocks into four types, the bases for this being (a) general appearance, (b) location, (c) size. This classification was indicated by numerals.

3. *Potential Residence Areas* (Pink diagonal lines).

These were recorded only where streets were cut, a definite start made with improvements, and their residential character established definitely. These served to indicate trends in urban expansion.

4. *Business Sections* (Red).

All sections devoted primarily to business and commercial activities were grouped under this head. On the field maps it was possible to distinguish each type and exceptions to the general rule in each section. No attempt was made to differentiate between the different types on the generalized map. The intention was to indicate there the location and areal extent of this form of land utilization as a whole rather than by types.

5. *Storeyards, Elevators, etc.* (Orange).

These features occupy scattered, though significant, locations in most urban areas. The contents of these was indicated by letter, e. g., E—Elevator, C—Coal, S—Stone, L—Lumber, B—Building material, etc.

6. *Parks, Recreation Grounds, Cemeteries* (Green).

These form an important part of the layout of an urban area. Each type was distinguished by letter. The significance of their location was very apparent in the Calumet District.

7. *Railroads, Freight Yards, Terminals* (Black).

The character of the railroad net, the routes followed by the numerous lines, the location and size of the freight yards, all have particular significance to the industrial and urban development in the Calumet District.

8. *Navigable Water* (Dark Blue).

This included all harbors and their approaches from Lake Michigan, the Indiana Harbor Canal, and the improved section of the Calumet River. These features have a close relationship to industrial development and their location and extent are, therefore, very significant.

9. *Non-Navigable Waters* (Light Blue).

These indicate important facts of the natural environment as well as of the cultural landscape. They indicate the unimproved portions of the rivers, the unfinished sections of the Indiana Harbor Canal, the shallow inshore waters of the lake, and the potential inland harbor of Lake Calumet.

10. *Vacant Land* (White).

Since this survey was made to obtain data of land actually used for urban and industrial development, all land not used for these purposes was classified as "Vacant". This included a very small acreage of cultivable land, large areas of swamp and sandy waste, and some scrub woodland and poor permanent pasture. These facts were noted on the field maps but not included on the final map. In some cases this land was held obviously for future industrial development, in others, for probable residential purposes.

#### GEOGRAPHIC INTERPRETATION.

The Calumet Industrial District stretches along the southwestern and southern shores of Lake Michigan from the western limits of South Chicago to the eastern limits of Gary.

The district is important chiefly because of its manufacturing which centers around iron and steel. The map indicates clearly the striking industrial layout with its accompanying urbanization. The character of this industrial development is obvious at a glance as one

traverses the district, for across wide tracts of unused land the large mills, with their many smoking stacks, stand out in striking relief.

Prior to the founding of the iron and steel plants little or no industrial, residential, or even agricultural development had taken place in the district in spite of its proximity to Chicago. The marshy and sandy character of the land had left it largely waste. Consequently, when the steel interests recognized the value of the lake shore and the banks of the Calumet River for large scale industry, they were able to acquire all the land they needed in large blocks, because no subdivision had taken place.

The facility to receive ore by boat was one of the chief requirements of the iron and steel industry. There were no natural harbors on the lake front and the mouth of the Calumet River required extensive improvement before it was accessible even to small lake boats. The low shore, the shallow water fronting it, and the materials underlying both the land and the lake, unconsolidated sand and clay till, made the digging of artificial harbors and canals, and the building of breakwaters relatively easy and inexpensive.

The district, located at the southern extremity of Lake Michigan, lies athwart the route inevitably followed by a number of railroads to Chicago from the east and southeast. The railroad pattern indicates the absence of any serious obstacles. The industrialists, once their attention was drawn to the district, recognized the value of its existing transportation facilities and the possibilities for extension.

Three types of location are utilized for iron and steel plants, (a) in a narrow belt along the lake shore (b) along the lower course of the Calumet River (c) along the Indiana Harbor Canal. Of these the first mentioned is by far the more significant.

Factories concerned with the fabrication of iron and steel are scattered throughout the district, but in most cases they are located strategically with reference to sources of raw materials and to railroad transportation. These, like blast furnaces and steel mills, require large sites. This is particularly true of those plants producing

railroad and structural equipment. Those concerned with less bulky products are located, as a rule, farther from the mills but along the railroads.

Certain other types of large scale industry such as chemical, cement, and oil-refining plants, occupy large sites within the Calumet District.

The abundant land available at reasonable cost, the excellent transportation facilities, and proximity to Chicago were largely responsible for their location.

Numerous industries have been established throughout the district but especially in the western parts. This phase of development and land utilization is common to most large urban areas. In some cases they are dependent upon the local market which increasing population affords, in others, they are located with reference to raw materials produced in the neighborhood, or which can be assembled easily in the district.

Urban centers have grown up around the several groups of iron and steel mills and fabricating plants with which they are associated. In most cases these urban areas are separated by wide stretches of vacant land. Only in the western part of the district is there an almost continuous built up area, owing to the closer grouping of the fabricating plants and of numerous industries which have been attracted to this thriving industrial area. The fourfold classification of residences reveals the following conditions—(a) the poorer types tend to be located in the more congested areas around the industrial plants (b) the best homes are located on the outskirts of each of the urban centers. The general unpleasantness of living under crowded conditions around big industrial plants is recognized. Consequently, urban expansion is taking place along the southern margin of the Calumet District where much more pleasant surroundings are to be found on the slightly elevated, well drained lands of the moraine country with their fertile loamy soils, than on the low poorly drained lands of the lake plain with their hopelessly sandy soil. This southern expansion has been possible because of the development of street car, motor bus, and suburban railroad services which provide rapid and cheap transpor-

tation to most of the industrial plants. The large number of private automobiles has increased the distance at which people can live and yet be located conveniently to their work. The bulk of this residential expansion southward is taking place between Gary and West Hammond where industrial development is more rapid than elsewhere in the district.

With the growth of industrial activity the trunk railroads traversing the lake plain have been supplemented by three belt railroad systems. These penetrate every section of the district, and offer direct connection with every one of the twenty-seven trunk lines leaving Chicago. The latter maintain clearing yards near the points of intersection in which products moving in and out of the district are handled expeditiously.

Scattered throughout the district along the various railroads are storeyards of all kinds. These are located strategically with reference to the reception and distribution of the products they handle. Elevators are concentrated, in the main, adjacent to both railroads and navigable water since they receive grain by rail, and ship large quantities by lake.

Owing to the occupation of the lake front by industrial plants only three small parks are to be found there. Others are to be found either in the congested areas themselves or on the fringes of the built up sections. Cemeteries are usually located on the slightly higher, better drained sandy ridges which cross the district at some distance from the lake shore.

Much land is vacant. Most of it has the appearance of waste since it is totally unfitted for agriculture and is unattractive for residential purposes. Much of it is suited for industrial projects because of its proximity to railroads, to navigable water, to established industrial plants, and to Chicago. Much is held already by industrial concerns for future development or by land companies for speculative purposes. There seems to be a general tendency to leave the present unoccupied areas to the north of the Grand Calumet River for industrial use and to encourage residential development farther and farther away from the lake.

## CONCLUSION.

A map of this type indicates at a glance the areal distribution of each feature of the cultural landscape in an urban area. From it the relationships between them can be readily seen, especially in the case of the industrial, residential, and business districts. A slight elaboration of the color scheme could be made, which would distinguish in greater detail the various types of industry. This might be necessary in a district of more complex industrial activity, or where a smaller area is being studied in great detail.