

CHAPTER VII

DISCOVERY OF THE RELATION BETWEEN LAND USE AND ZONING

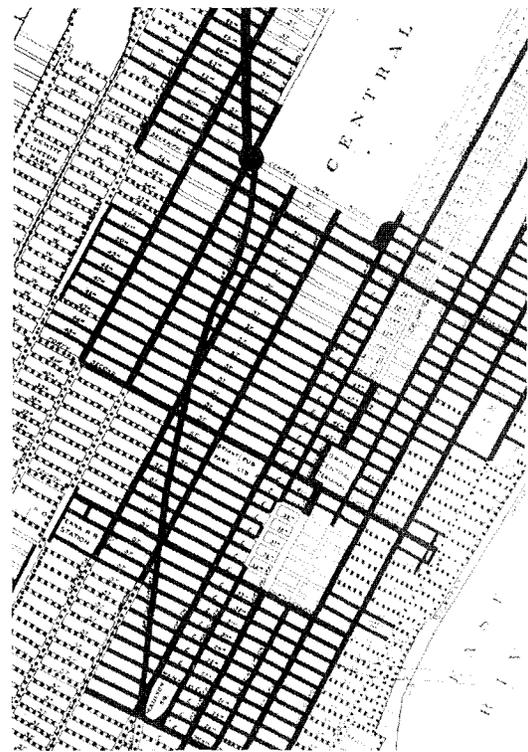
Passage of the zoning resolution of New York City in 1916 was a major landmark in American urban planning. While the public in general was slow to accept the concept of planning, the acceptance of zoning was almost overwhelming. It quickly became the most popular part of a planning program and sometimes was accepted while the remainder of the plan was forgotten.

Very early plans did not include land use plans although the early planners, of course, had to know where the land uses were--the retail stores, the residential areas, the industry, the various public and semi-public institutions, the parks and schools, and the like. But why make a land use plan when there was nothing you could do to bring it about, no control over the private use of land? Early American planners looked wistfully at European cities, and particularly at Germany where there were such controls.

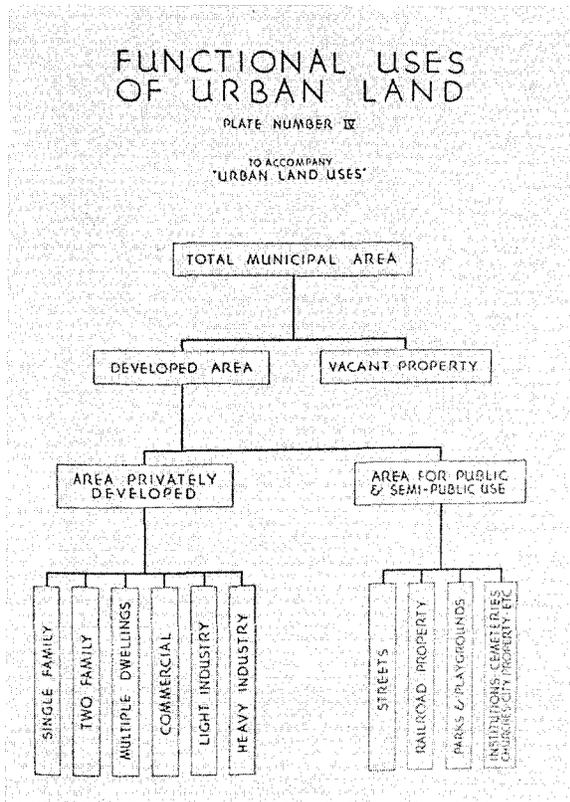
For example, Frederick Law Olmsted Jr. wrote: (See VI-5)

Early in the 1900's my attention was caught by experiments in comprehensive city planning and zoning which had been gradually taking place in Europe, especially in the early 1870's, in Germany.

I studied them in operation there, and in France and England....



55 A part of the zoning map for the New York City Zoning Ordinance of 1916. While not directly involved, Harland Bartholomew would go to New York to attend meetings and hearings as a most interested observer.



56 This basic classification used consistently by Harland Bartholomew and Associates has the virtues of simplicity and of being directly related to the usual zoning district requirements.

Although Harland Bartholomew did some work in South America, he did not travel to Europe until after World War II, when he was well along in his career. His was a completely American experience.

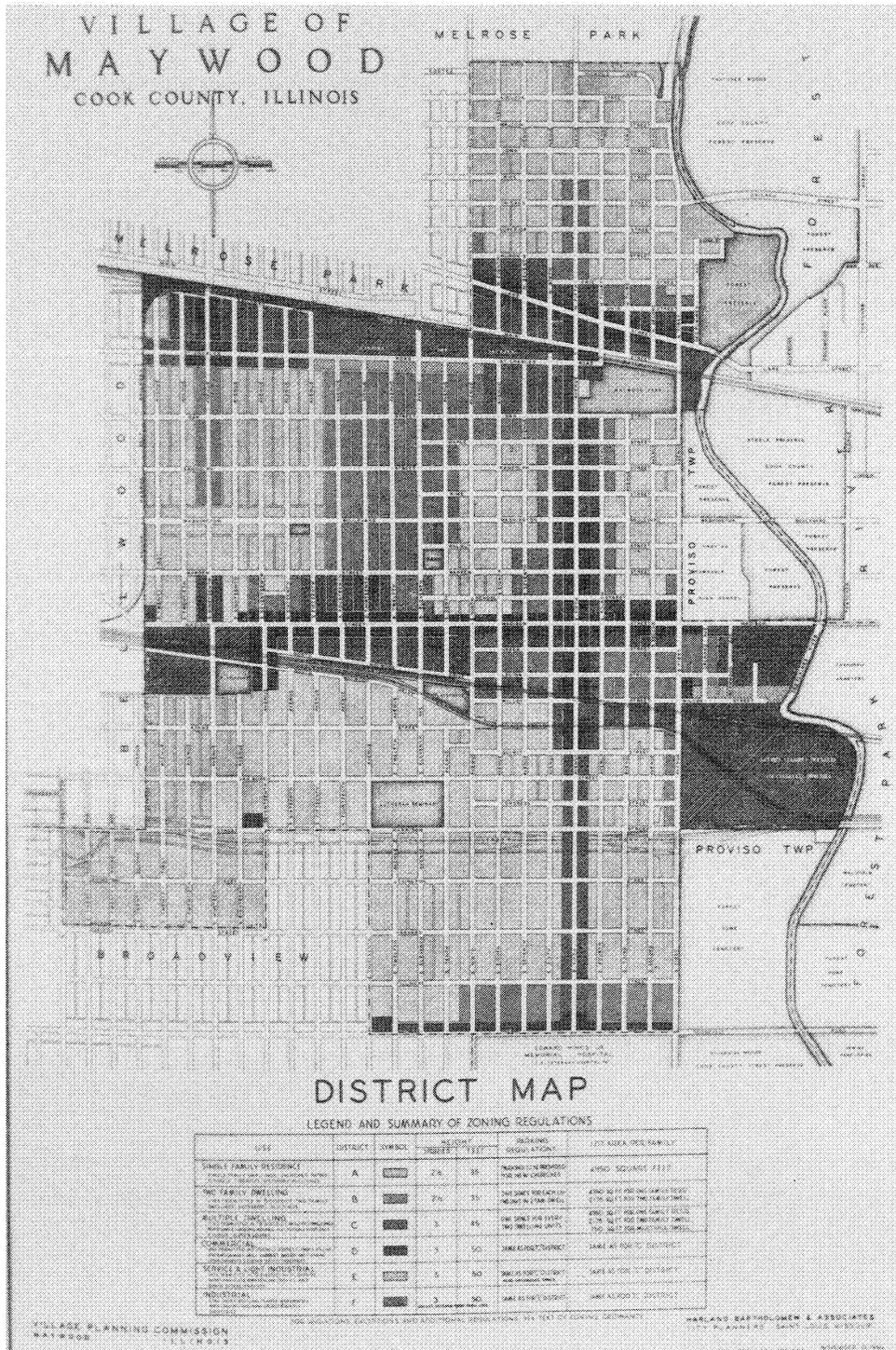
When zoning was first put into effect and then gradually accepted as legal by the courts, the planner could have a land use plan, and this was the zoning district map. As zoning was simplified and each separate district included use, height, area, and density regulations, the single zoning map became a population density as well as a land use plan. Unfortunately, as city after city enacted zoning regulations in the 1920s, different parts of the city were designated for different uses without any knowledge

at all of how much area was, or would be, occupied by the various uses. Slums and blighted areas were placed in apartment or even in industrial districts in the wishful hope that someday someone would buy them up and displace the slums with an apartment or factory. Commercial uses were allowed all along major thoroughfares, not only because they seemed suitable for such a use, but also because this made easier the financing of street widening through a special assessment process. In the early years of zoning, overzoning for the most intensive uses--apartments, business and industry--was endemic. However, no one was disturbed. No one knew the difference.

THE WASHINGTON DISCOVERY

In 1922, Harland Bartholomew was the consultant on the zoning regulations for the District of Columbia. There was a great demand on the part of the real estate interests for sizable increases in apartment zoning in the northwest part of the city, out Connecticut Avenue, for example. This was the most desirable part of Washington to live in and the city's growth tended to be unbalanced because of disproportionate "pull" in this direction. Being concerned about both the unbalanced growth pattern and protection of the District's finest residential values, Bartholomew and the members of the National Capital Park and Planning Commission sought to strengthen their case: to demonstrate the advantages of not increasing the areas zoned for apartments.

It occurred to Bartholomew that there might not be a need for so much apartment zoning. Perhaps if they measured the area occupied by apartments in the District and then measured the area they had zoned



57 A typical zoning map prepared for a Chicago suburb in 1952. In most communities this was the most important part of a planning program.



58 Single-family Residential Areas. One of the illustrations in "Land Uses in American Cities," 1965.

for apartments, they would learn something. Fortunately, they had the staff and the records that allowed them to do this. To everyone's great surprise, even though they appeared to be almost everywhere, when you added up all of them, apartments occupied but a tiny part of the District of Columbia. The area provided for them on the zoning map was not too small but much too large! With this information, they were able to defeat the proposals to enlarge the apartment areas.

Bartholomew was curious. If this was true of apartments, what about all of the other types of land use? Perhaps they should all be measured. Then we could allocate for each use on the zoning map the actual area that might be needed by the future growth of the city plus some extra to allow a little leeway and keep the zoning ordinance from being (or being called) a "straight jacket." At this point, the zoning district map could indeed become a land use plan.

THE LAND USE SURVEY

From then on, for every city for which Bartholomew and Associates prepared a comprehensive plan, a land use survey was made. A standard survey classification system was devised and used consistently in order to obtain data that could be compared, city to city.

The Classification System

The land use classification system that was used was a fairly simple one. (1) Other systems have been developed and used but none quite as simple as that of Harland Bartholomew. The classification system was such that the resulting data could be used in preparing the zoning district map. Once

adopted and used, the classification system could not be changed because the comparability of the data would be ruined. The same system is used by Harland Bartholomew and Associates today, more than 60 years later, and in no way inhibits present day planning. A simple system can be made more complex when more detailed information is needed.

Land use is divided into several categories:

Residential

- Single-family homes
- Two-family homes
- Multiple dwellings (apartments)

Commercial

Industrial

- Light industry - non-obnoxious
- Heavy industry - obnoxious or dangerous

Public and Semi-public

- Schools, churches, hospitals, institutions, golf courses, etc.

Public Parks

Railroads

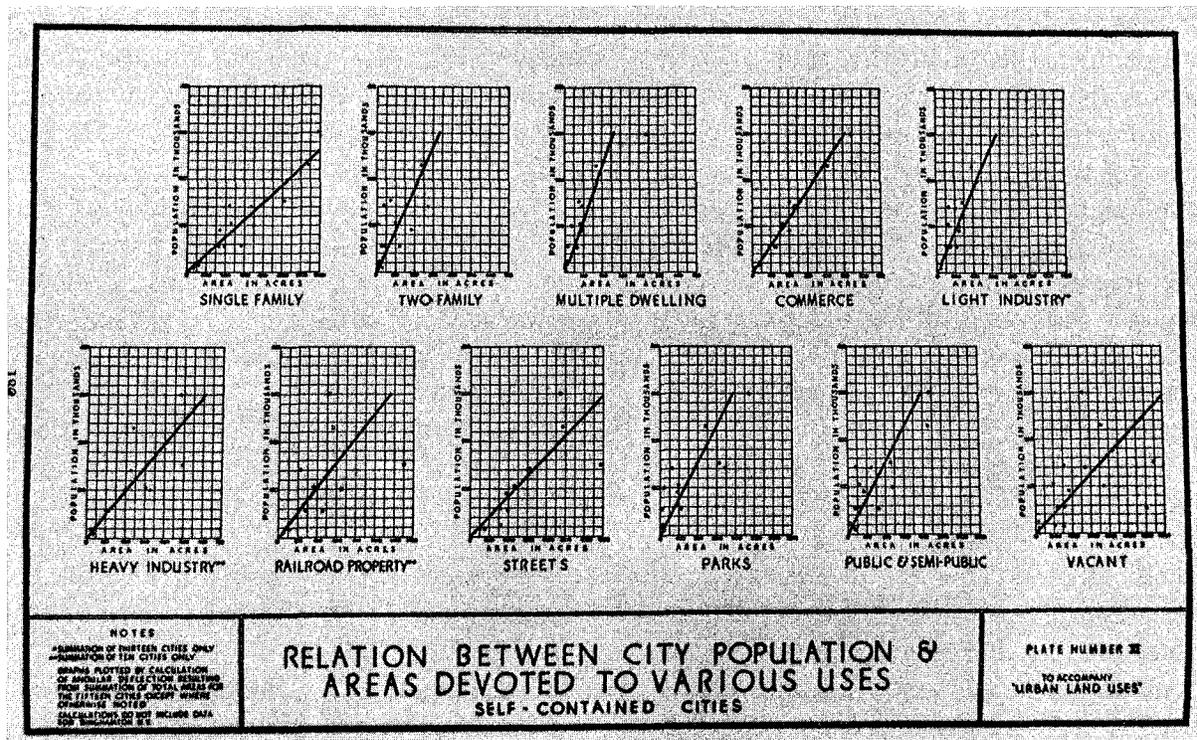
Streets

Vacant Land - undeveloped or agricultural

A long list was prepared, placing specific uses in the appropriate category. Each use category had a symbol and a color. (2)

Making the Survey

In the early days of planning, there were no readily available aerial photographs. Most of the large cities were fairly well covered by the Sanborn Insurance Atlas, which showed each building and its lot and sometimes gave an indication of its use. The planner would secure a set of large-scale plat maps of the city at a scale of one inch to one hundred feet, or similar scale. On these they would transfer, by means of a



59 Relation Between Population and Areas Devoted to Various Uses. One of the illustrations in "Urban Land Uses," 1932. Here, Harland Bartholomew is trying to find a relationship that can be extrapolated so that estimates may be made of future needs for commercial areas or apartment area, for example. Unfortunately, the relationships are only fairly consistent from city to city and are not stable but dynamic, changing over time, making the burden on the estimator a heavy one.

semi-shorthand notation, the material from the Sanborn Atlas that related to use of the land.

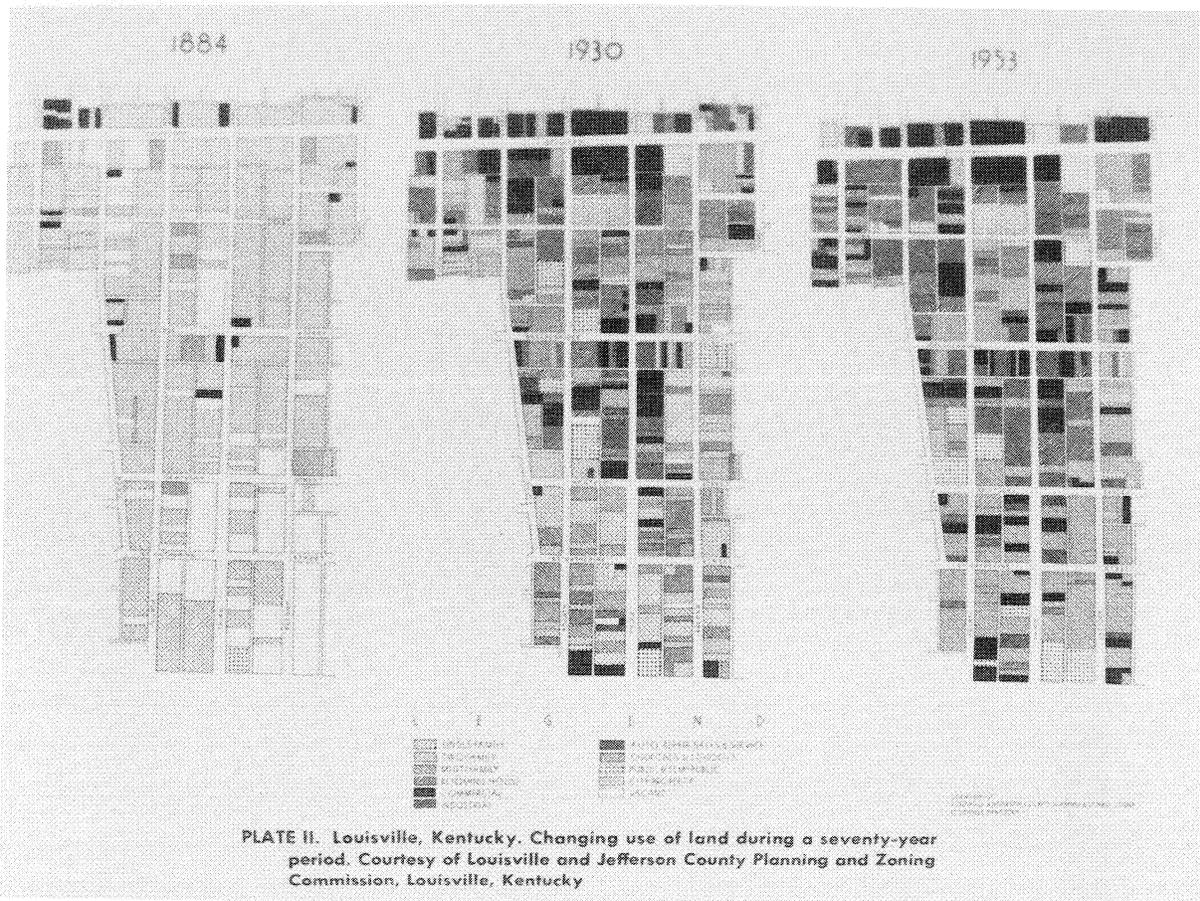
The planner would then take these maps out on the ground and on foot (driving in a car was strictly prohibited in the early days at Harland Bartholomew and Associates) to check the use of each property. He would then bring the map back into the office, perhaps transfer the material to a smaller scale, citywide map and then measure the area occupied by each of the land uses, using a scale and a slide rule. The individual areas would have to add up to the total map area, which was calculated separately.

The land use survey was a long, laborious, and expensive process. It did

reveal essential data about a city never known previously. It also resulted in planners that really knew the city they worked in; they had literally seen every building in it.

When vacant land was subtracted, the total developed area of a city was the remainder. Sometimes as much as one-third of the developed area would be occupied by streets and another one-third by single-family homes. The troublesome uses in zoning such as businesses, apartments, and industry almost always occupied tiny land areas, frequently less than five percent of the total.

We could take these carefully calculated land areas, develop area-to-population ratios, project them in



60 This illustration from "Land Uses in American Cities," 1955, has been brought up-to-date from the 1932 book and emphasized again the dynamic nature of the American city with almost nothing staying the same for very long unless there were firm and consistent zoning controls or enforced deed restrictions.

proportion to anticipated city growth and have estimates of future land use areas. The zoning map could be related to these, usually by a trial-and-error process, and we would have a zoning ordinance "reasonably in scale with future need."

URBAN LAND USE - 1932

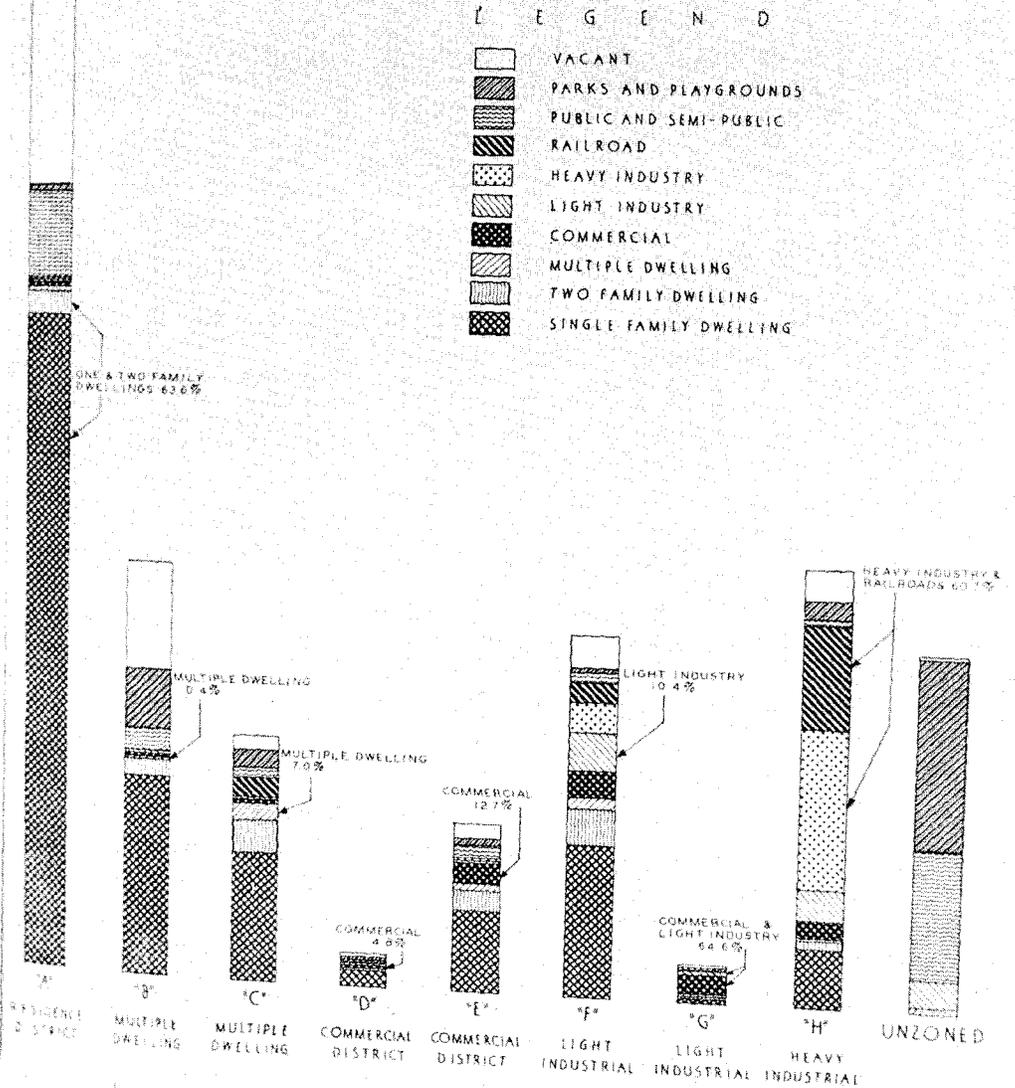
As more and more cities were surveyed in this manner, Harland Bartholomew began to notice a certain similarity in the data. At a national planning conference, he mentioned this to Henry Hubbard of the

Department of Landscape Architecture of Harvard University. The result of the conversation was a book, a part of the Harvard City Planning Studies Series, written by Harland Bartholomew with the assistance of John Marr, describing and comparing the results of 22 land use surveys made by Harland Bartholomew and Associates up to that time. With the assistance of Jack Wood, the book was brought up to date in 1955 and included new statistics on the 53 central cities, and an additional survey of 33 satellite cities and 11 urban areas. The revised book, *Land*

ACTUAL USES IN EXISTING DISTRICTS OF PRESENT ZONING ORDINANCE HAMILTON, OHIO

CITY PLANNING COMMISSION
HAMILTON
OHIO

HARLAND BARTHOLOMEW & ASSOCIATES
CITY PLANNERS
SAINT LOUIS, MISSOURI



61 Actual Uses in Existing Zoning Districts was an illustration in the Hamilton, Ohio revised Comprehensive Plan of 1948. Compiling this data in the pre-computer era was a monumental task undertaken to demonstrate the need for major revisions in the zoning map.

CITY PLANNING COMMISSION		TABLE OF EXISTING & ZONED AREA OF DIFFERENT USES LOUISVILLE KENTUCKY	
	DESCRIPTION	AREA ZONED ACRES	AREA USED ACRES
A.	1 FAMILY RESIDENCE	5922.09	7429.6
B.	2 & 4 FAMILY RESIDENCE	3652.74	
C.	APARTMENT (3 STORY)	603.04	407.9
D.	APARTMENT (8 STORY)	1013.40	
E.	COMMERCIAL (2 1/2 STORY)	233.04	537.0
F.	COMMERCIAL (3 STORY)	151.44	
G.	COMMERCIAL (8 STORY)	89.81	1112.5
H.	LT. INDUSTRIAL (BULK)	424.84	
I.	LT. INDUSTRIAL (3 STORY)	28.19	481.3
J.	LT. INDUSTRIAL (10 STORY)	2806.69	
K.	HVY. INDUSTRIAL (10 STORY)	2123.30	

62 This is one of the first comparisons between land use and zoned areas. Louisville, Kentucky Comprehensive City Plan of 1927.

Uses in American Cities, was also published by the Harvard University Press. (3)

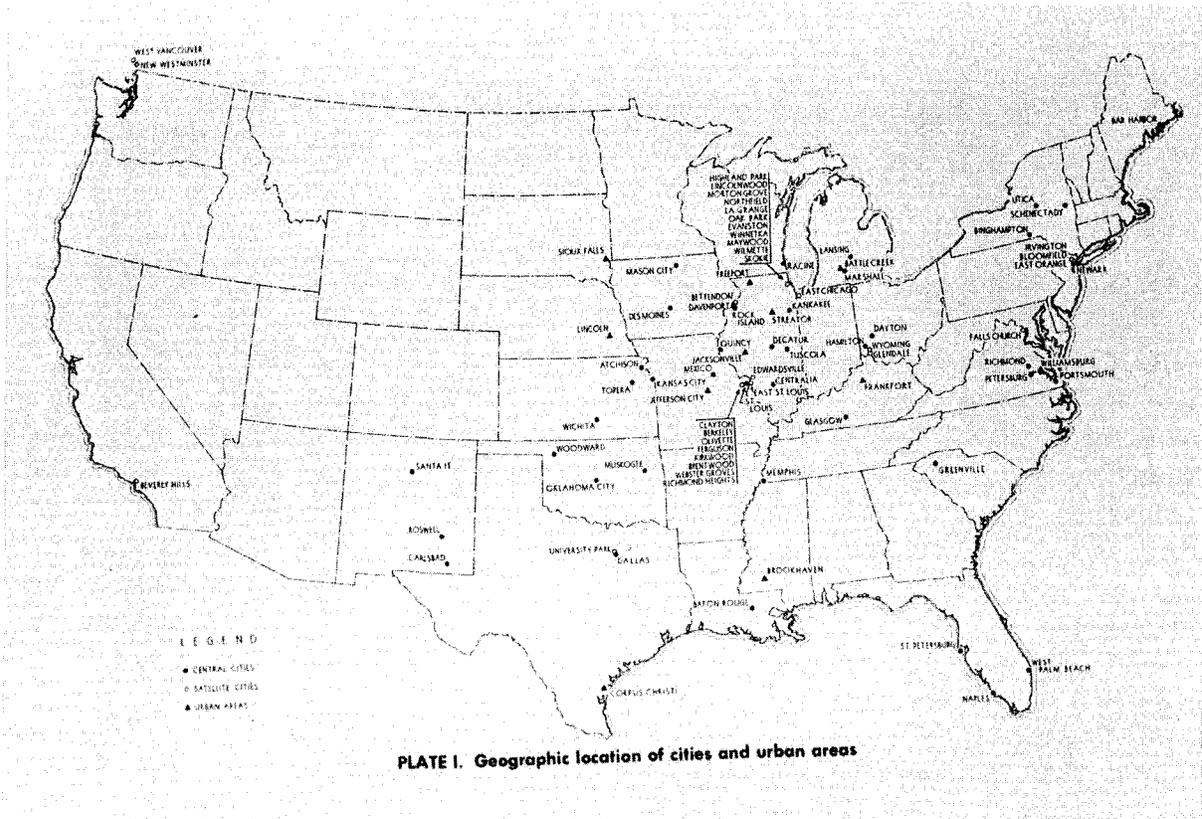
LAND USES IN AMERICAN CITIES

By the end of World War II, it was more than evident that the local political arrangements were seldom going to be adjusted to reflect the dynamics of urban expansion. The area made eligible for urbanization by the automobile was too large to be annexed by the central city. Suburban cities were formed. In some states township governments were strong. In other places restrictions on annexation or even state or county lines got in the way. To enable the entire community to be studied, an "urban area" would be mapped and surveyed. The 1955 book included 11 such urban areas and a major conclusion of the book reported a comparison of per-capita and percentage-of-developed-area of the 10 land uses in the central city, the satellite city and the urban area. Assembly of so many statistics in the pre-computer period was a considerable achievement. It took a lot of work (drudgery). The 1955 book included 23 illustrations.

This unusual contribution to urban research was made by a private individual at times when there was no research of this type being done anywhere. The principles established are now so universally accepted by all planners that the two books describing them may be looked back upon as being simplistic and unsophisticated--a great compliment to them.

FOOTNOTES

- VII-1 For a more detailed description of the land use classification system used, see URBAN LAND USES, Harland Bartholomew, Harvard City Planning Studies, No. 4, Cambridge, Mass.: Harvard University Press, 1932.
- VII-2 Ibid - see appendix.
- VII-3 LAND USES IN AMERICAN CITIES, Harland Bartholomew, Harvard University Press, 1955



63 This map locates the central cities, satellite cities, and urban areas studied in the 1965 book "Land Uses in American Cities."

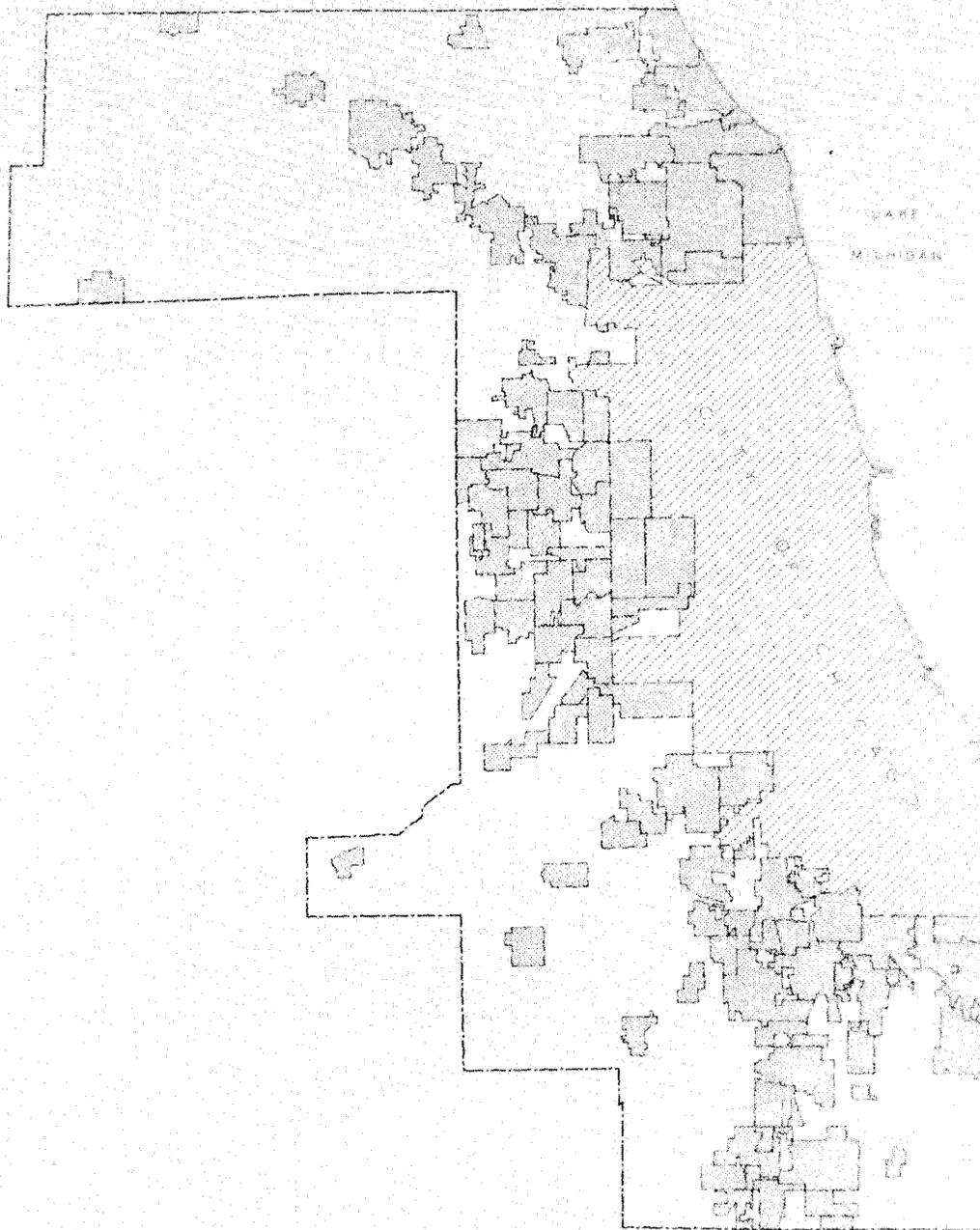


PLATE XII. Cook County, Illinois. The fringes of large central cities are being divided into a multiplicity of small disjointed incorporations.

64 Each individual municipality is free to do pretty much as it pleases in its control of land use and until a few years ago was able to ignore regional considerations or any regional planning that was being done. Few metropolitan areas escaped this plague. This map of Cook County, Illinois was an illustration in "Land Uses in American Cities."

One of the most interesting forms of development in the city of tomorrow is the neighborhood unit. In brief, the neighborhood unit is the area bounded by major streets. It may be anywhere from 40 acres to 200 acres in size. It is essentially a residence district with only such stores and shops located at the corners as may be needed to serve the population within the unit. The rectangular street pattern will be abandoned. Much of the street area will be devoted to open space in the form of parks and playgrounds. Buildings will be arranged in groups so that the standards of light, air, and open space will be far superior to that now possible by the use of individual lots.

- East Saint Louis, 1933

Old residence districts close to the central business district that have degenerated into slums, and which are not needed for expansion of commerce and industry, should be rebuilt with moderately-priced, large-scale, limited dividend housing projects. It must be a new type of housing design combining good management, adequate open space, low population density, and be large enough to create its own environment despite the character of surrounding property.

- Chicago, 1940

Cities have grown as the result of a multitude of individual impulses. Since there has been little or no attempt to coordinate the varied activities resulting from these impulses, the modern city is an organism lacking unity.

- Saint Louis, 1925

The well-planned city will thus have not only harmony but also that other essential of good design - the adaptation of form to function.

- Sacramento, 1928

Whatever we may say about the city of the pre-automobile age, it had the indispensable merit of sound economic form. It was centralized in form and economically well organized.

- Saint Louis, 1932