

ZONING APPLIED TO PARKING

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CHAPTER I
INTRODUCTION

Zoning has been described by the United States Department of Commerce as "the application of common sense and fairness to the public regulations governing the use of private real estate¹ . . . it is a part of city planning rather than an entirely separate operation, designed to promote and protect the health, safety, morals, convenience, prosperity and general welfare of the community."²

Zoning is most commonly used to control the segregation of commerce, industry, residence, recreation, and other forms of land use. This segregation is aimed at providing better living conditions in each of the various areas devoted to different land uses. Although now in general use, zoning is a relatively new urban regulation.

PARKING ATTACKED THROUGH ZONING

The first zoning regulations in this country were the building height district regulations of a few of the larger cities, such as those in Boston, adopted in 1903. Another form of early zoning was the establishment of fire districts in cities, with certain types of buildings restricted for the various districts. In 1909 the city of Los Angeles enacted the first districting ordinance applying to an entire city. This ordinance divided the city into residential and non-residential districts, but its principal purpose was to exclude Chinese laundries and some offensive industrial uses from residential districts. A modern, comprehensive municipal zoning ordinance not only applies to the entire area of the city, but embodies all three major types of regulations: (1) use, (2)

¹*A Zoning Primer*, U. S. Department of Commerce, 1928.

²*The Preparation of Zoning Ordinances*, U. S. Department of Commerce, 1931.

height, and (3) area. The first major zoning ordinance of this kind in the United States was adopted by New York City in 1916.³

THE AUTHORITY TO ZONE

When zoning was first instituted, the constitutional rights to regulate private property were questioned. While height and area regulations were accepted with little objection, there was a widespread resentment of controlling land uses. However, the local and state courts generally upheld zoning regulations controlling land use and the ruling by the Supreme Court of the United States on legality of zoning in the case of *Village of Euclid, Ohio v. Amber Realty Co.*: 1926, 47 *Sup. Ct.* 114, substantiated these decisions. This represented the first important consideration of the constitutionality of comprehensive zoning ordinances and the decision in favor of the legality of zoning has proved very helpful to city planners and others interested in municipal government.⁴

Municipalities must obtain their power to employ zoning principles from the state.⁵ The constitutions of some states have from their beginning given municipalities specific powers to adopt regulations to secure the health, safety, morals, comfort, convenience and general welfare of the community. Where such powers were provided, municipalities have been able to use them as the necessary legal authority for zoning. Where these powers were not granted or where courts refused to recognize them as authority for zoning, municipalities had to wait for the legislative body of the state to pass a zoning enabling act. In a few instances, the courts refused to recognize the legality of zoning until state constitutional revisions were effected.

³*Local Planning Administration*: Ladislav Segoe; International City Managers Association, June 1941.

⁴*The Legality of Zoning*: Newman F. Baker, University of Chicago Press, 1927.

⁵*Zoning*, Edward M. Bassett, Russell Sage Foundation, 1936.

Granted authority to apply zoning, legislative bodies of municipalities can then specify the manner in which zoning regulations and restrictions must be established, enforced, and amended or supplemented from time to time. It is customary to provide for a board of appeals which may "in appropriate cases and subject to appropriate conditions and safeguards make special exceptions to the terms of the ordinance in harmony with its general purpose and intent and in accordance with the general and specific rules therein contained."⁶

In many municipalities the effectiveness and application of zoning regulations are dependent upon the approval of a minimum percentage of the property owners in the districts affected. This, in effect, provides that the zoning is to comply with or meet the desires of "the majority."

Through the years, zoning has changed from "general" to "specific" controls. Many new urban problems have been met through zoning powers.

Recently, a major municipal problem, parking facilities for automobiles, has been attacked through the use of zoning. It is shown by this study that the parking problem can be effectively tackled through zoning requirements. Sufficient experience has been gained to show that off-street facilities required by zoning provide a uniform, impartial, and effective means of assuring adequate terminal facilities in cities. It is believed that this plan will ultimately be recognized in all cities and that cities will enact zoning ordinances which will assure at least adequate provision of off-street parking facilities to serve traffic loads generated by new businesses. However, it must be understood that the mere passage of a zoning ordinance is not in itself adequate to the relief of parking ills. Effective and impartial enforcement of the provisions of the ordinance is essential; even then, considerable time will elapse in most communities before

⁶*Zoning, A Statement of Principles and Procedure*, Civic Development Department, Chamber of Commerce of the United States; June, 1929.

the parking problem is alleviated through zoning. Zoning ordinances properly written and properly enforced will have a favorable long-range effect upon the parking problem of cities and towns.

Attempts have been made to alleviate the parking problem by strict curb use regulation. This is a necessary traffic regulation, but alone, it will not solve the problem of providing adequate parking space in most business and congested areas. Spaces must be available off the street to supplement those which can be provided at the curb. Pending development of off-street areas, bans on cars parking can be a compromise, at least. If such spaces are not provided, experience has shown that business will likely be dispersed to outlying areas where parking is readily accessible to the motoring public. Such decentralization of the downtown districts, if rapid and uncontrolled, is dangerous. Central business districts of most cities pay a large proportion of the property taxes. In New Haven, Connecticut, for example, the central district pays 20 per cent of the total city property tax—this on only 1.5 per cent of the tax-paying area of the city.⁷

Tax evaluations in the downtown district of Baltimore, Maryland, dropped 30 per cent in ten years.⁸ Such losses are detrimental to the welfare of a city and become acute if the city is bounded by other incorporated places so that it is unable to gradually recover the losses by raising values in the newly developed shopping and business areas. Attributed directly to traffic congestion and to an acute shortage of terminal facilities, these economic losses can be reduced by providing proper off-street parking and loading facilities for the central district. A uniform long-range solution to parking is provided through zoning. This use of zoning powers to require all new building to provide parking spaces in keeping with the demand created

⁷*Tomorrow Is Here*, City Plan Commission, New Haven, Connecticut, 1944.

⁸*Keep Customers Coming*, American Retail Federation, 1945.

by the basic uses to which the building is put has been employed for many years and interesting experiences have resulted.

Although not covered by the survey conducted by the Eno Foundation, zoning has been applied successfully to the problem created by parking along rural highways. The success with which zoning has been applied in cities has caused much study of its possible uses in controlling developments adjacent to state highways. To this end, an act to "zone highway protective areas" has been drafted and distributed by the American Society of Planning Officials.⁹ Portions of the act are reproduced below in the footnote.

CONDUCT OF STUDY

In August 1946, information was sought by mail from city engineers and city planning commissions of the 1,060 cities in the United States with 1940 populations of 10,000 or greater. The questionnaire used to collect data is shown in Appendix. Replies were received from cities in all forty-eight states and the District of Columbia. Of the 1,060 cities contacted, 586, or 55.5 per cent submitted information. Table I shows the returns by various population groups.

TABLE I
SOURCES OF INFORMATION ON CITY ZONING ORDINANCES FOR
PARKING AND LOADING

POPULATION	NUMBER OF CITIES	INFORMATION FURNISHED	
		NUMBER	PER CENT
10,000 to 25,000	649	289	44.5
25,000 to 50,000	212	146	69
50,000 to 100,000	107	76	71
100,000 and over	92	75	81.5
Total	1060	586	55.5

⁹*Draft of An Act To Zone Highway Protective Areas*; Alfred Bettman, Attorney, Cincinnati, Ohio; distributed by American Society of Planning Officials.

This act is designed to give the state authority to: "Establish and provide for the

defining of the boundaries of a highway protective area along the state highways and for the regulation, through the State Planning Board and State Highway Commission, of the location and other characteristics of buildings and structures and of the uses of buildings, structures and land within said area and the location and design of access roads, for the purposes of the promotion of health, safety, convenience, prosperity and welfare of the people of the state and the protection of the state's investment in its highways by the promotion of the safety of travel upon, the traffic-carrying capacity of, and the scenic attractiveness of the highways, and for other purposes; providing for the enforcement of this Act and the disposition of fees and fines collected hereunder."

The act recognizes the primary purpose of highways and gives the commission authority to require off-street parking facilities: "The highways of the state are primarily for moving vehicles; and for the purpose of reducing the use of the highways for standing vehicles, the Commission may, in its determinations upon the extent of districts and other features of its regulations, take into account the need for and may make reasonable requirements as to off-highway parking or standing spaces for the customers, prospective customers or others who may have occasion to stop at places where business, industry, travelers' service and home occupations are conducted."

"'Travelers' service' means classes of pursuits and services customarily required and used by travelers on the highway and intended predominantly for travelers on the highways, such as and including gasoline filling stations, small garages, small automobile repair shops, 'hot-dog' stands, beer parlors, tea-rooms, small wayside hotels for overnight board and lodging, tourist camps, restaurants and eating places, auto camps and the like."

CHAPTER II

PRACTICES IN ZONING FOR PARKING

The use of zoning powers to create and regulate off-street parking and loading facilities has been applied in a variety of ways, and with varying results. Some cities have applied the regulation generously; others have resorted to its use only in specific cases.

There are, of course, a variety of ways in which zoning for parking can be accomplished. Cities have developed typical classification of land use—distinguishing between types and uses of different buildings. Most parking and zoning ordinances have been made to follow this basic pattern.

CITIES WITH ORDINANCES

Of the 586 cities furnishing information for the study, 70, or 12 per cent reported ordinances requiring the provision of off-street parking or loading facilities. The geographical distribution of these cities is shown in Figure 1. Twenty-five per cent of the cities reporting in the population group from 50,000 to 100,000 submitted zoning ordinances affecting parking and loading. Figure 2 shows the percentages of cities in each population group having the zoning ordinances.

Based on replies, 7 per cent of the cities with populations from 10,000 to 25,000; 12 per cent with populations from 25,000 to 50,000; 25 per cent with populations 50,000 to 100,000; and 28 per cent with populations 100,000 and over, have zoning ordinances. Since it is likely that information was obtained from most of the cities with such ordinances, percentages based on the total number of cities in each population group probably represent more closely actual conditions which currently pre-

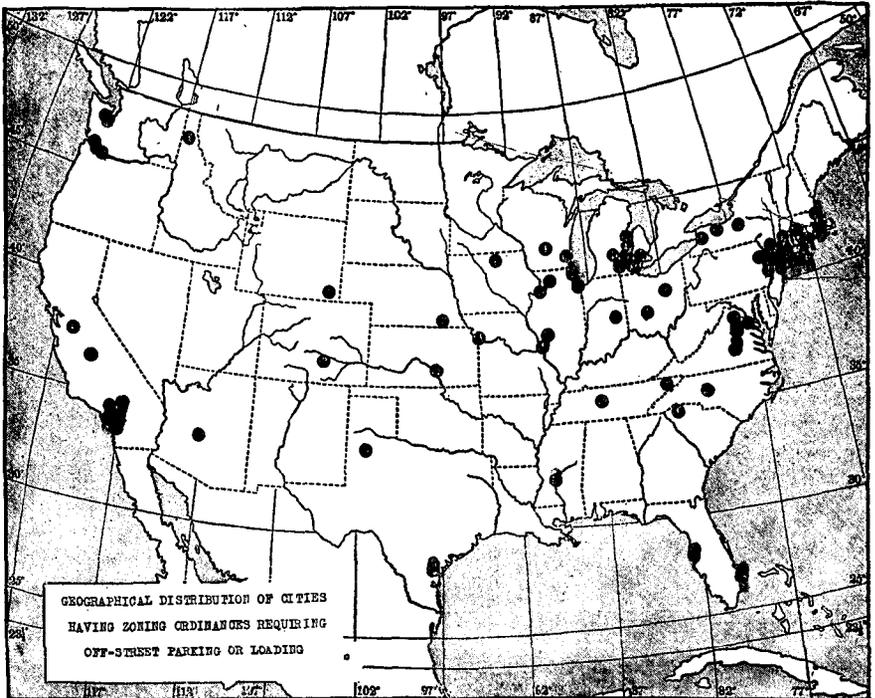


FIGURE 1

Geographical distribution of cities having zoning ordinances requiring off-street parking or loading

vail. For the four population groups, these values are: 3 per cent, 7 per cent, 18 per cent, and 23 per cent, respectively.

Nineteen states have reported no cities with zoning ordinances pertaining to off-street parking or loading facilities. The distribution of these states is shown in Figure 3. This, of course, does not mean that this number of states is without cities having zoning regulations affecting parking; they might not have been reported.

EARLY PARKING ORDINANCES REPORTED

For cities furnishing information for this study, the first reported zoning ordinance for parking was in Columbus, Ohio,

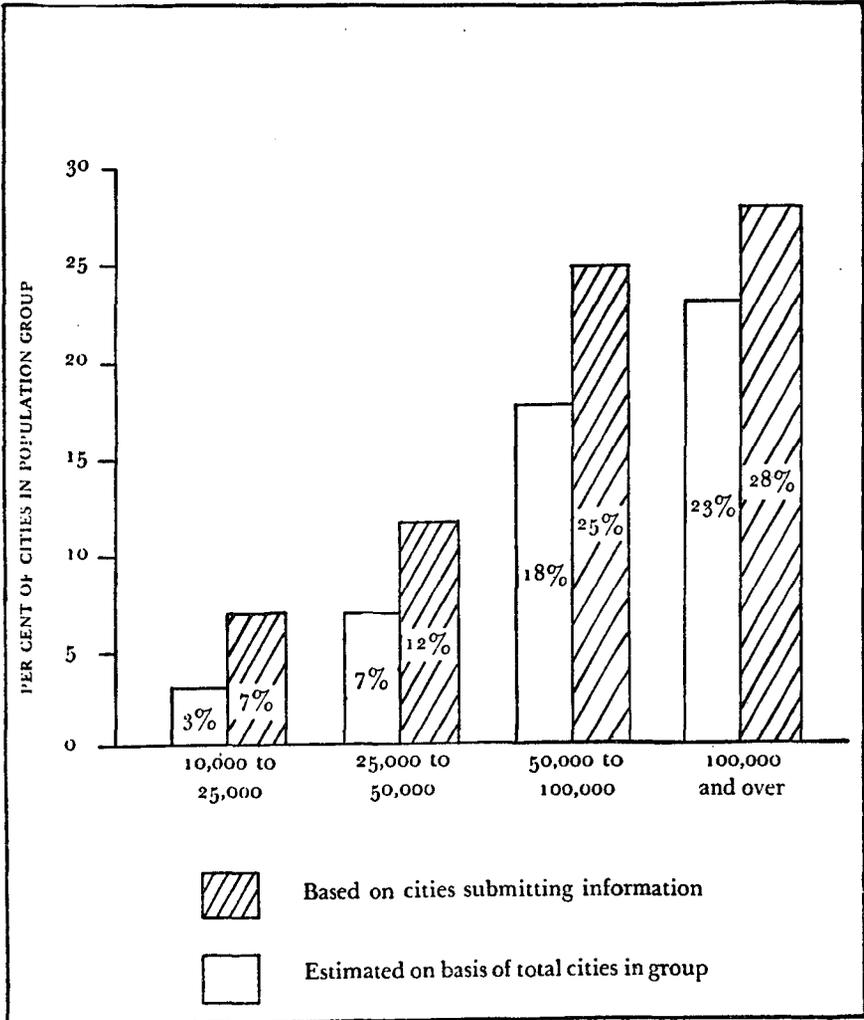


FIGURE 2

Cities having zoning ordinances requiring off-street parking or loading

where, in August, 1923, requirements were imposed which prescribed that off-street parking spaces be provided in connection with multiple family dwellings. The first ordinance reported in



FIGURE 3

Distribution of states having cities with zoning ordinances requiring off-street parking and loading facilities

the study which prescribed that parking spaces be provided in connection with buildings other than dwellings was in Fresno, California, where in March 1939, an ordinance was passed which required hotels and hospitals to provide off-street parking spaces on the basis of one space per three guest rooms. The earliest ordinance reported, requiring commercial loading spaces off the street, was passed in Pueblo, Colorado, in 1931. This ordinance is discussed in a later section.

REQUIREMENTS BY TYPE OF BUILDING USE

Figure 4 shows the number of cities requiring parking for passenger cars in connection with the eleven types of buildings covered in the study. The most common ordinance involves provision of parking space in connection with multiple family dwellings. Sixty cities, 86 per cent, reported ordinances affecting this type of building. Other types of buildings have not been required to furnish off-street parking facilities in as many cities.

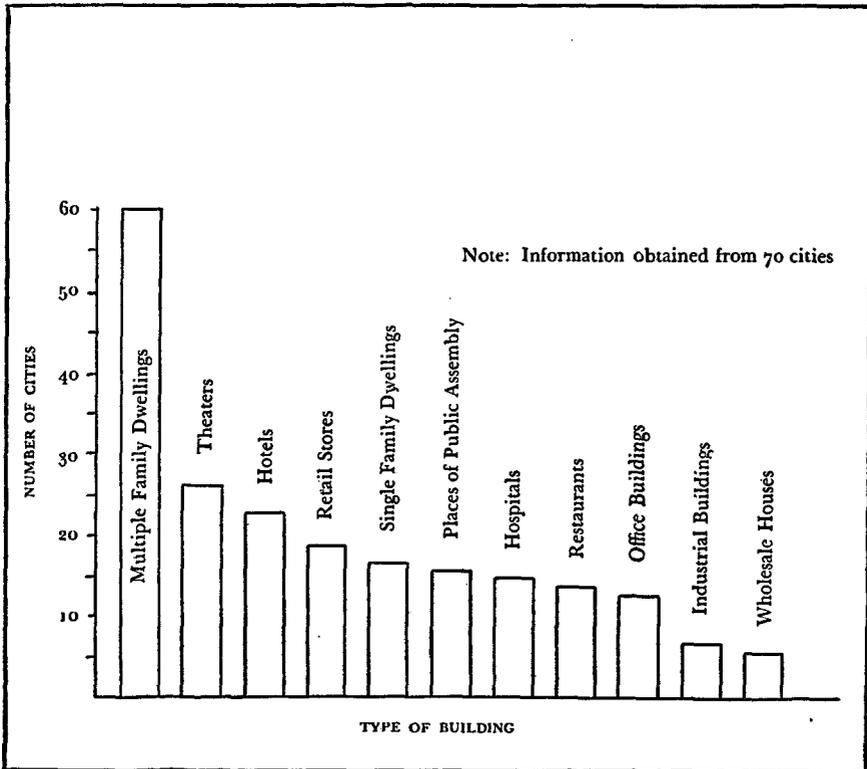


FIGURE 4

Cities requiring off-street parking facilities by type of building

Figure 5 shows the per cent of cities in the various population groups which require off-street parking facilities for different types of building and land uses. It can be seen that cities in the population group 50,000 to 100,000 have been more active than those in the other population groups in requiring off-street parking facilities.

The population group 100,000 and over has required parking facilities for single family dwellings in 12 per cent of the cities submitting information. This is more than three times as great as the next group, 50,000 to 100,000, which requires such facilities in slightly less than 4 per cent of the cities submitting information for the study. A possible explanation of the attention given zoning effecting dwellings in larger cities may come from the fact that traffic congestion in these cities generally extends far beyond the central business districts, frequently into residential areas and into areas adjoining outlying shopping districts.

It is in these larger cities that several important focal points for business or shopping are likely to be found in addition to the major downtown area; the size of the city is often indicative of its age and thereby the inadequacy of initial planning with provisions for street transportation; it is also a common fact that it is in the larger cities that the higher land values are commonly found, and in which these values have resulted in subdivisions of land into small lots, creating acute congestion. These conditions cause an early recognition of the seriousness of vehicles parked at the curb in front of business and dwellings and may account for the attention given to single family dwellings in zoning ordinances.

Figure 6 shows the number of cities requiring loading spaces for commercial vehicles in connection with the six types of commercial buildings studied. As indicated, retail stores, wholesale houses, and industrial buildings, are required to furnish off-street loading facilities more frequently than are other types of commercial building.

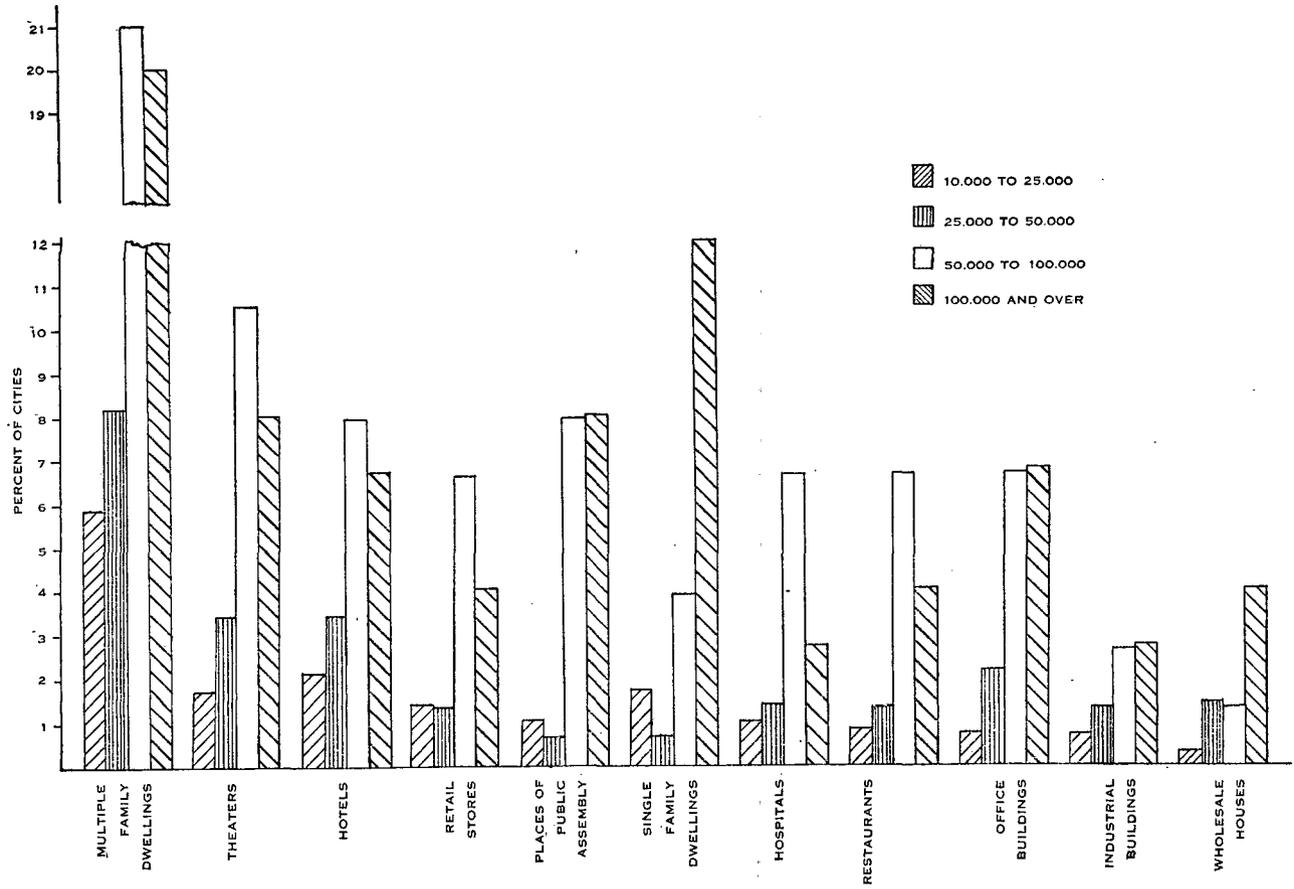


FIGURE 5
 Cities requiring parking for various types of buildings and land uses — by population groups (Based on replies to Study)

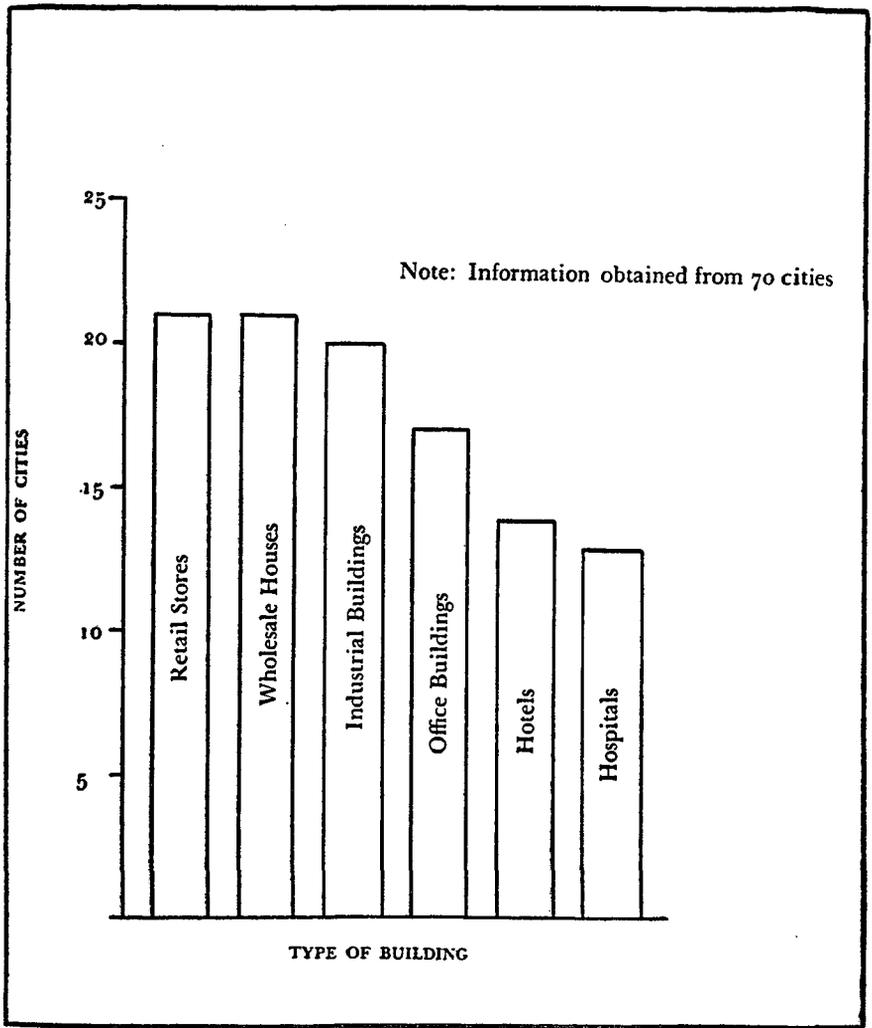


FIGURE 6

Cities requiring off-street commercial loading facilities by type building

A discussion of the pertinent phases of ordinances enacted in connection with various buildings is given below:

SINGLE-FAMILY DWELLINGS

Among the 70 cities reporting ordinances which require the provision of off-street parking facilities, 18, or 26 per cent, specify them in connection with single-family dwellings.

This type of ordinance is found in cities within all the population groups. The smallest city reporting such an ordinance is Clayton, Missouri, with a 1940 population of 15,000; the largest city reporting such an ordinance is Los Angeles, California. Twelve per cent of the cities with populations over 100,000 submitting information for the study, report such ordinances. Only one city—Vancouver, Washington—in the population group 25,000 to 50,000 reported such an ordinance.

Among the cities reporting in the population group 10,000 to 25,000, New Castle, Indiana, with a population of 17,000, has an ordinance typical of those in the group which reads:

Residences: There shall be laid out and provided an accessible automobile parking or garaging space on each residential lot equal to not less than 150 square feet for each family unit.

Many cities in addition to those with zoning ordinances, have required the provision of off-street parking in connection with dwellings by writing into their traffic regulations a section which prohibits curb parking from 2:00 A. M. to 6:00 A. M.: "in order to allow street cleaning and snow removal," etc. Urban traffic is normally very light during those hours, with the majority of automobile users at their homes, therefore, such a requirement makes off-street parking necessary in conjunction with residences.

MULTIPLE-FAMILY DWELLINGS

This type of dwelling must provide off-street parking spaces in 86 per cent of the cities which have zoning ordinances pertaining to parking. About two-thirds (63 per cent) of these ordi-

nances require the provision of off-street parking facilities on the basis of one parking space for each dwelling unit. One city requires that one and one-half parking spaces be provided for each dwelling unit, the purpose being to accommodate visitors and the few families which possess more than one vehicle. The distribution of these ordinances among the population groups is shown in Table II.

TABLE II
DISTRIBUTION OF ZONING ORDINANCES REQUIRING PARKING IN
CONNECTION WITH MULTIPLE FAMILY DWELLINGS

POPULATION GROUP	NO. OF CITIES	PER CENT OF CITIES REPLYING HAVING SUCH ORDINANCES
10,000 to 25,000	17	5.9
25,000 to 50,000	12	8.2
50,000 to 100,000	16	21.0
100,000 and over	15	20.0

The smallest city reporting such an ordinance is Coeur d'Alene, Idaho, with a population of about 10,000. A section of the ordinance follows:

Off-Street Parking Space. For every multi-family dwelling hereafter erected there shall be provided on the same lot or plot with such dwelling, either in the rear yard or as a part of the dwelling, an accessory garage for the storage of private passenger automobiles. Such garage shall be of such size, shape and location as to conveniently accommodate two (2) passenger automobiles for every three (3) dwelling units contained in such multi-family dwelling, plus one (1) additional car space for any dwelling units in excess of multiples of three (3). For the purpose of this ordinance, any space having clear dimensions of less than nine (9) feet by twenty (20) feet or which is so located that an automobile cannot be driven into it, shall not be considered as an adequate car space.

In lieu of erecting a garage as heretofore required, the owner of a multi-family dwelling may elect to provide a temporary, off-street parking place, having a dustless surface and of such size, shape and location as required for garages.

Whenever, at any time in the future, more than three (3) automobiles habitually use such parking space, or such parking space and the streets adjacent to the multi-family dwelling it serves, or for any other reason in its judgment pertinent to the maintenance of safety and public convenience, the city council may require the erection of a permanent garage in accordance with the provisions of this section.

Very few ordinances state specifically whether such off-street space shall be an enclosed garage or an open lot. One city requires that at least one-half of the off-street spaces shall be garages. This city requires that one parking "space" of 200 square feet be provided for each dwelling unit. An excellent example of garage facilities provided in connection with an apartment house is shown in Figure 7, page 27.

It is interesting to note that there is a close relation between the multi-family dwelling zoning requirements in a community and the motor vehicle registration in the community. In the western part of the United States, where motor vehicle registration may be as high as one vehicle per two persons, the majority of the zoning ordinances require one parking space per dwelling unit. In the eastern part of the United States vehicle registration varies from one per four persons to one per six persons and many zoning ordinances require only one space per two or three dwelling units. There are various requirements, such as the provision of two parking spaces for every three dwelling units, or three parking spaces for every four units, but in almost all cases studied, the requirements were less in the east than in the west. Table III shows the various requirements of the sixty cities which reported ordinances affecting multi-family dwellings.

HOTELS

One-third of the cities reporting zoning ordinances relating to parking, require that parking facilities be provided in connection with hotels. Brookline, Massachusetts, requires that one parking space be provided for every family in "Family Hotels."

TABLE III
PARKING REQUIREMENTS FOR MULTIPLE-FAMILY DWELLINGS

REQUIREMENTS	NO. CITIES REPORTING	PER CENT
1½ Parking Spaces per 1 dwelling unit	1	1.7
1 Parking Space per 1 dwelling unit	37	61.5
1 Parking Space per 1 dwelling unit (except 1)	1	1.7
1½ Parking Spaces per 2 dwelling units	1	1.7
3 Parking Spaces per 4 dwelling units	3	5.0
2 Parking Spaces per 3 dwelling units	2	3.3
1 Parking Space per 2 dwelling units	13	21.7
1 Parking Space per 4 dwelling units	1	1.7
4 Parking Spaces per 5 dwelling units	1	1.7
Total	60	100

The most common requirement is one space for every three guest rooms. Many zoning ordinances simply specify "adequate" parking.

Table IV gives the requirements for the twenty-two cities reporting ordinances affecting hotels. These cities are distributed

TABLE IV
PARKING REQUIREMENTS FOR HOTELS

REQUIREMENTS	NO. CITIES REPORTING	PER CENT
1 Parking Space per 1 room	3	13.6
3 Parking Spaces per 4 rooms	1	4.6
1 Parking Space per 2 rooms	2	9.1
1 Parking Space per 3 rooms	6	27.2
1 Parking Space per 4 rooms	2	9.1
1 Parking Space per 10 rooms	1	4.6
1 Parking Space per 10 feet frontage	1	4.6
Parking Space equal ground floor space	2	9.1
"Adequate"	4	18.1
Total	22	100

almost equally among the four population groups. There are six cities each from the groups 10,000 to 25,000, and 50,000 to 100,000; and, five cities each from the groups 25,000 to 50,000, and 100,000 and over.

A typical ordinance showing the average requirement of one parking space per three guest rooms was adopted May 16, 1942, by Arlington County, Virginia. A section of the ordinance follows:

In connection with any lot or plot on which is built any hotel, there shall be provided space for the standing of vehicles on such lot or plot, or in the immediate vicinity thereof, to accommodate one vehicle for each three guest rooms contained therein. Where garage or vehicle standing space is provided on other than the lot on which the building is situated, the location of such shall be approved by the County Board of Arlington County. If such vehicle standing space is not provided on the same parcel of land on which such use is conducted, such vehicle standing space shall be deemed to be required open space on the parcel of land on which the same is located and shall not thereafter be reduced or encroached upon in any manner except on approval by the Board of Zoning Appeals in either of the two following circumstances only: (a) Such space may be reduced by the amount to which other similar space, similarly situated, and subject to the same conditions as herein specified for such space in the first place, is provided for the use to which it is appurtenant. (b) Such space may be reduced by an amount in proportion to any reduction in guest room capacity of the use to which it is appurtenant which the Board of Zoning Appeals finds has actually taken place as a result of structural or other alterations in the building or structure in which use is conducted.

Twenty per cent of the reporting cities require hotels to provide off-street loading facilities for trucks. These requirements vary from a minimum of one loading space per 20,000 square feet of floor space used for storage or merchandising, to a maximum requirement of one loading space per 5,000 square feet of gross floor area. Several cities require loading spaces, but

do not fix a definite amount; each case is judged individually by a competent authority.

It is interesting that no city in the population group 25,000 to 50,000 reported an ordinance requiring off-street loading spaces in connection with hotels. Five cities in the group 10,000 to 25,000 reported such ordinances; 2 cities in the group 50,000 to 100,000, and, 7 cities in the group 100,000 and over reported such requirements for hotels.

Los Angeles, California, has enacted an ordinance which requires loading spaces in accord with the size of structures:

LOADING SPACE—Every hospital, institution, hotel, commercial or industrial building hereafter erected or established on a lot which abuts upon an alley or is surrounded on all sides by streets, shall have one (1) permanently maintained loading space of not less than ten (10) feet in width, twenty (20) feet in length measured perpendicularly to the alley, and fourteen (14) feet in height, for each two thousand (2,000) square feet of lot area upon which said building is located; provided, however, that not more than two (2) such spaces shall be required, unless the building on such lot has a gross floor area of more than eighty thousand (80,000) square feet, in which case there shall be one (1) additional loading space for each additional forty thousand (40,000) square feet in excess of eighty thousand (80,000) square feet or fraction thereof above ten thousand (10,000) square feet.

HOSPITALS

Eighteen per cent of the cities showing zoning ordinances require hospitals to provide off-street parking space. One-third of these call for parking space on the basis of one vehicle per three guest rooms. Ann Arbor, Michigan, treats hospitals similarly to multiple-family dwellings, requiring one parking space for each employee living in the hospital and one space for each two employees not living in the building. Other requirements are on the basis of floor area as shown in Table V.

TABLE V
PARKING REQUIREMENTS FOR HOSPITALS

REQUIREMENT	NO. CITIES REPORTING	PER CENT
1 Parking Space per 3 rooms	4	33.0
1 Parking Space per 1,000 square feet floor area	1	8.5
1 Parking Space per 200 square feet ground floor area	1	8.5
1 Parking Space per employee living in building; 1 per 2 employees not living in building	1	8.5
1 Parking Space per 300 square feet of sleeping space	1	8.5
"Adequate"	4	33.0
Total	12	100.0

Ordinances requiring hospitals to provide off-street parking facilities are found in all population groups. The population group 50,000 to 100,000 indicated the greatest interest with 7 per cent of the cities which submitted information in this group having such requirements for hospitals.

Hospitals must furnish off-street loading facilities for trucks on approximately the same basis as hotels. Of the thirteen cities reporting the requirement of such facilities, ten base requirements on the floor area of the hospital. The remaining three cities allow each case to be judged individually by a competent authority.

THEATERS

The idea of requiring theaters to provide parking space to accommodate the vehicles of its patrons is relatively new. Detroit, Michigan, was the first city of the group studied to place such a requirement in its zoning ordinances. This was done in 1940 when the city adopted an ordinance requiring theaters to furnish one off-street parking space for each ten seats in the auditorium of the theater.

The requirements vary widely among the twenty-four cities reporting such ordinances—from one parking space per four seats to one per twelve seats. Several cities require parking space to be furnished on the basis of floor space. Two cities require space for parking equal to the total floor space of the building.

A summary of requirements for cities which impose such ordinances on theaters is given in Table VI.

TABLE VI
PARKING REQUIREMENTS FOR THEATERS

REQUIREMENT	NO. CITIES REPORTING	PER CENT
1 Parking Space per 4 seats	4	17.1
1 Parking Space per 5 seats	2	8.1
1 Parking Space per 6 seats	1	4.1
1 Parking Space per 8 seats	1	4.1
1 Parking Space per 10 seats	4	17.1
1 Parking Space per 12 seats	1	4.1
$\frac{3}{4}$ Parking space per 10 seats Space equal to floor space	2	8.1
1 space per 200 square feet floor area	2	8.1
1 space per 10 feet frontage	1	4.1
"Adequate"	5	21.0
Total	24	100.0

These requirements are applied to theaters in cities of all sizes. Both New Castle, Indiana, population 17,000 and Los Angeles, California, population 1,800,000, require one off-street parking space for each ten seats in the theater. Clayton, Missouri, with 15,000 inhabitants, and Arlington, Virginia, population 125,000 have imposed the same requirement upon theaters—one off-street parking space per four seats. Between the requirements of Los Angeles—New Castle and Clayton—Arlington are found the other requirements. These are summarized in Table VI.

The major parking demands of a theater are normally after the closing time of other business establishments in the same section of the city. For this reason, it appears sound to allow theaters to take advantage of off-street parking facilities used by other business establishments during the day. Frequently these parking facilities are not in use during the early evening hours when recreation traffic in the city is at its peak, and when demand for parking space by theater patrons is great.

Detroit, Michigan, is considering a revision of its zoning ordinance relating to theaters which will provide that: "not more than fifty (50) per cent of the off-street parking facilities required for theaters may be supplied by off-street parking facilities provided for other kinds of buildings or uses not normally open, used or operated during the principal operating hours of the theater."

RESTAURANTS

Although only 17 per cent of the cities which zone for off-street parking require restaurants to furnish such space for patrons, many other cities are studying the possibility of adopting such ordinances.

Wichita, Kansas, is considering an ordinance which requires restaurants to provide one parking space for each 100 square feet of floor area devoted to dining purposes. This ordinance, however, does not affect restaurants located in buildings which occupy less than 1,000 square feet of lot area.

Los Angeles, California, requires one parking space for each 1,000 square feet of floor space if the total floor area is 7,500 square feet or more.

Several cities require parking space equal to the total ground floor area of the restaurant, and at least one city requires the provision of one parking space for each four seats to be used by patrons of the restaurant.

Saint Petersburg, Florida, has adopted a general ordinance which affects restaurants, as well as many other land uses, including: Studios, show rooms, stores or shops, banks, bakeries, and offices. The ordinance is as follows:

PARKING: The owner of any building that is used for one or more of the above uses shall provide an off-street parking space adequate to accommodate one (1) car for every two hundred (200) square feet of floor area in the building that is devoted to retail or display use. Such parking space may be located on the same lot as the building or on an area within three hundred (300) feet of the building. Two or more owners of buildings may join together in providing this parking space.

PLACES OF PUBLIC ASSEMBLY

About one-fourth of the cities with ordinances relating to off-street parking require that parking facilities be provided in connection with such places of public assembly as churches, auditoria, bowling alleys, stadia, and dance halls. Several cities require parking space for church-goers on the basis of the number of seats in the church. The most common requirement calls for one space per ten seats. Many cities exempt churches from these requirements in view of the fact that parking demands for other purposes are usually at a minimum when churches are in session.

Parking spaces for patrons of auditoria are usually based on the number of seats in the auditorium, or on the floor area "if there are no seats or if the seats are removed for certain events." One space per ten seats is the most common requirement.

The zoning ordinance of Madison, Wisconsin, contains a section affecting places of public assembly. This section, which is very clear and concise, is reproduced below:

PARKING SPACES REQUIRED FOR PLACES OF PUBLIC ASSEMBLAGE: Space for parking of vehicles shall be provided in connection with any building or premises used or designed to be used as a theater, auditorium, or other place

of public assemblage, except churches. Such parking space shall be not less than two hundred (200) square feet for each five permanent seats in such place of permanent assemblage.

Bridgeport, Connecticut, has placed parking requirements on two special types of facilities devoted to public entertainment and which serve as focal points of traffic on certain occasions. All bowling alleys in this city of 200,000 are required to furnish off-street parking facilities on the basis of one and one-half spaces for each alley used for bowling. Dance halls are required to furnish parking facilities in the amount of three-fourths space for each 56 square feet of dance floor. These figures take into account the fact that such establishments, especially dance halls, concentrate a large number of people in a relatively small area.

Although Bridgeport does not authorize such an arrangement, it is practical to allow bowling alleys and dance halls to use parking facilities normally operated by other business establishments during other periods of the day, as was mentioned previously in the discussion of theaters. However, in order to make such provisions, consideration must be given to the parking habits of the general public. Five hundred feet has been determined to be the maximum distance which a person likes to walk from his parking place to his ultimate destination. This distance will vary in different localities, and under different conditions, being particularly affected by adverse weather conditions. If parking spaces are to be provided in connection with such entertainment facilities, these desires of the public must be considered, otherwise the parking spaces provided will not be used effectively.

RETAIL STORES

Twenty per cent of the 70 cities which have zoning ordinances require retail stores to provide off-street parking facilities for their customers. Of these 14 cities, 3 cities require one parking space per 200 square feet of floor area, 2 cities require parking space equal in area to the ground floor area, and the

others have varying methods of determining the parking space required.

There appears to be no definite relation between parking requirements for retail stores and the size of the city. Webster Groves, Missouri, population 20,000, requires show rooms and other similar types of land use to provide one parking space per 200 square feet of gross floor area. Los Angeles requires retail stores to furnish one off-street parking space per 1,000 square feet of floor area if the total floor area is in excess of 7,500 square feet.

Although retail stores are not required to furnish parking facilities in many instances, they head the list of all establishments in requirements for off-street loading facilities. Thirty per cent of all cities which have zoning ordinances require retail stores to furnish adequate facilities for off-street loading and unloading of merchandise. The requirements of space are generally determined in one of three ways:

1. *Gross floor area.* The most common requirement calls for one commercial loading space per 20,000 square feet of gross floor area. One small city in the east requires one loading space per 5,000 square feet of gross floor area, and another in the same vicinity requires one loading space per 8,000 square feet of gross floor area.

2. *Space between alley and rear of building.* At least five cities require an open space between the rear of retail stores and an alley. The most common ordinance calls for 50 per cent of the alley frontage to be devoted to unloading space, such space to be a minimum of 14 feet in depth from the alley to the rear of the building.

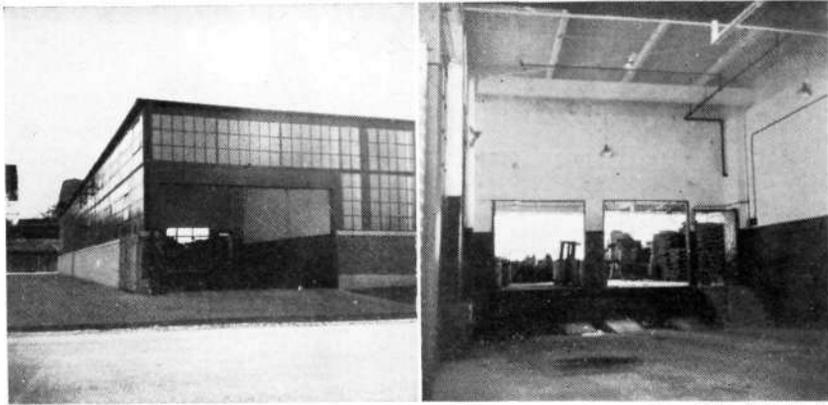
3. *"Reasonable" or "adequate" facilities.* Five cities require off-street commercial loading facilities, but do not specify a definite amount of such space to be provided. All these ordinances rely upon the word "reasonable" or "adequate," combined with the phrase "so as not to interfere with traffic." This



FIGURE 7
Garage connected with an apartment house



FIGURE 8
Off-street parking facilities furnished for patrons of retail stores



City of Plainfield, N. J.

Exterior View

FIGURE 9

Interior View

Off-street loading facilities provided through use of zoning

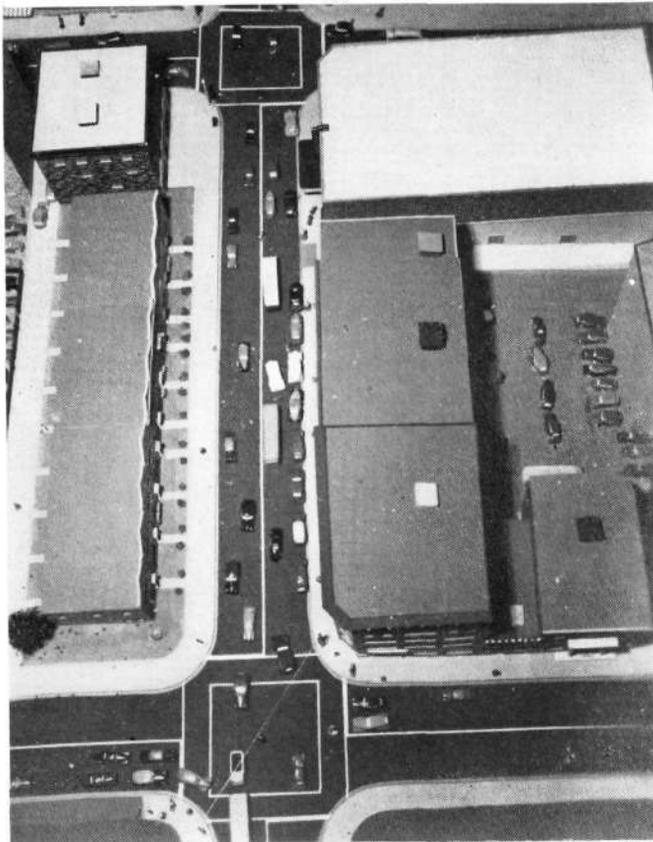


FIGURE 10

Unregulated parking areas are often used inefficiently

type of ordinance allows the zoning board of appeals or other authority to pass on each case individually. While this system offers the advantage of allowing each case to be judged on its individual merits, it also presents the possibility of bias or favoritism.

The distribution of zoning ordinances affecting off-street loading facilities for trucks is shown below in Table VII.

TABLE VII

DISTRIBUTION OF ZONING ORDINANCES REQUIRING OFF-STREET LOADING FACILITIES FOR RETAIL STORES

POPULATION GROUP	NO. CITIES REPORTING	PER CENT CITIES
		IN EACH GROUP HAVING ORDINANCE
10,000 — 25,000	7	2.4
25,000 — 50,000	1	0.7
50,000 — 100,000	5	6.6
100,000 and over	8	10.6

It can be seen that of the 146 cities in the population group 25,000 to 50,000 submitting information for the study, only one, Plainfield, New Jersey, has an ordinance which requires retail stores to furnish off-street facilities for the loading and unloading of merchandise. This ordinance, which was adopted in November, 1945, is as follows:

All loft buildings, department stores, retail and wholesale food markets or stores, warehouses or supply houses erected in any zone after the date of adoption of this ordinance shall provide one unloading berth of 200 square feet for motor vehicles for each 8,000 square feet of gross area in the building devoted to such purposes. This may be provided either within the building or on open space on the same lot and the minimum clear height of such space, including access to it from the street, shall be 14 feet. This provision shall not apply to any building with less than 8,000 square feet of gross floor area devoted to such purpose.

Figure 9 illustrates loading facilities which have been constructed as a result of this ordinance.

OFFICE BUILDINGS

Fifteen cities, 21 per cent of all cities reporting zoning ordinances, require office buildings to provide off-street parking for employees and visitors. Ten of these cities base their requirements on floor space of the building. The ordinances vary from a requirement of one parking space per 200 square feet of floor space, which Davenport, Iowa, is considering and which St. Petersburg, Florida, has adopted, to a requirement of one parking space per 1,000 square feet of floor area. Some cities have adopted the latter requirement for buildings which have a total floor area of 7,500 square feet or more. As in the case of retail stores, several cities have ordinances that require each case to be specified individually.

Nashville, Tennessee, has an interesting ordinance in connection with parking spaces for office buildings:

PARKING: There shall be provided garage space in the main building, or in an accessory building, or accessible and available automobile parking space on the lot to be occupied by a permitted use, equal to or greater than the following:

USES	MINIMUM NUMBER OF PARKING SPACES
2. Office buildings, hospitals and clinics, having less than three thousand (3,000) square feet of floor area, and funeral directors establishments.	Six (6)
3. Office buildings, hospitals and clinics, having over three thousand (3,000) square feet of floor area.	Six (6) plus one (1) for each one thousand (1,000) square feet of floor area over three thousand (3,000) square feet.

In determining floor area above, use the gross area and in determining automobile parking spaces, if not shown by actual plan and count, use three hundred (300) square feet of gross area per parking space.

The requirements placed upon office buildings to provide adequate freight loading space off the street follow very closely the requirements imposed upon retail stores, although only seventeen cities, or 24 per cent of cities with ordinances, control this matter.

The population group 25,000 to 50,000 again submitted only one ordinance which requires off-street loading facilities for office buildings. As in the case of retail stores this one ordinance was submitted by Plainfield, New Jersey.

Many office buildings and other structures have provided parking facilities for motorists by using land in the rear of the building. Such facilities are very convenient; but they should be carefully regulated to avoid inefficient use of space. If the parking area is not properly laid out, much land will be wasted due to improper parking practices. An example of such inefficient use of parking space is shown in Figure 9.

WHOLESALE HOUSES AND INDUSTRIAL BUILDINGS

Industrial establishments and wholesale business houses do not generally create as great a demand for parking space as retail stores and theaters which depend primarily upon a steady turnover of customers and which are likely located in more congested areas. Therefore, buildings devoted to industry and wholesale trade might logically receive less attention when the problem of providing off-street parking facilities arises. Figure 4 shows these two types of buildings to be affected by parking ordinances in 10 per cent and 11 per cent respectively of the cities with such ordinances.

Among cities requiring these buildings to furnish off-street parking facilities, about one-fourth require parking on the basis of floor space; about one-fourth allow each case to be judged individually with no definite standard; and one-half require spaces on the basis of the number of regular employees in the establishment. The latter seems a very sound basis, since the

number of employees may vary widely between different industrial establishments having approximately the same floor area, the variations being caused by the type of industry. The more popular requirement is one parking space per two employees. Various studies made throughout the country have revealed that the average occupancy of passenger vehicles is 1.7 passengers per vehicle, and these findings verify this parking requirement.

Although cities have not required industrial and wholesale buildings to furnish parking space as frequently as other buildings, these two types of buildings have long been required to furnish adequate off-street loading facilities. The earliest ordinance, based on replies received, dates back over fifteen years. The city of Pueblo, Colorado, created an ordinance in June, 1931, requiring wholesale houses and industrial buildings to provide off-street loading facilities. The ordinance reads as follows:

LOADING SPACE: Every building erected on a lot abutting upon an alley shall provide a loading space for the use of commercial vehicles serving such buildings. Such loading space, unless adequately provided elsewhere on the lot, shall extend not less than 14 feet in depth back from the alley line along 50 per cent of the alley frontage, but in no case along less than 25 feet. In lieu of the foregoing requirement, a lot 50 feet or more in width may provide a loading space of not less than 10 feet in depth back from the alley line along the entire alley frontage.

Based on reports, wholesale houses are required to furnish adequate loading spaces in 21 cities, and industrial buildings are required to furnish such spaces in 20 cities. The bases on which the necessary number of spaces are determined are the same as were given for retail stores.

1. Gross floor area.
2. Space between alley and rear of building.
3. "Reasonable" or "adequate" facilities so as not to interfere with traffic.

Four other cities follow the example of Pueblo, Colorado, in requiring space to be provided along at least 50 per cent of the alley frontage in the rear of the building. Eight cities require "adequate or reasonable space so as not to interfere with traffic." Six cities base their requirements upon floor area, the values ranging from one loading space per 8,000 square feet of gross floor area to one space per 25,000 square feet of gross floor area. One city bases its requirement upon the lot area of the land on which the building is erected. A summary of this information is shown in Figure 6.

Ordinances affecting off-street loading facilities in connection with wholesale houses and industrial buildings are distributed throughout all population groups as shown in Table VIII.

TABLE VIII

DISTRIBUTION OF ZONING ORDINANCES REQUIRING OFF-STREET LOADING FOR WHOLESALE HOUSES AND INDUSTRIAL BUILDINGS

POPULATION GROUP	NO. OF CITIES		PER CENT	
	HAVING ORDINANCES		CITIES REPLYING	
	WHOLESALE HOUSES	INDUS. BUILDINGS	WHOLESALE HOUSES	INDUS. BUILDINGS
10,000 — 25,000	6	6	2.1	2.1
25,000 — 50,000	2	2	1.4	1.4
50,000 — 100,000	5	4	6.6	5.2
100,000 and over	8	8	10.6	10.6

Kansas City, Missouri, has an ordinance which requires off-street loading facilities on the basis of floor area:

On the same premises with every building, structure or part thereof, erected and occupied for manufacturing, storage, warehouse, goods display, department store, wholesale store, market, hotel, hospital, mortuary, laundry, dry cleaning or other uses similarly involving the receipt or distribution by vehicles of materials or merchandise, there shall be provided and maintained on the lot, adequate space for standing, loading

and unloading services in order to avoid undue interference with public use of the streets or alleys. Such space, unless otherwise adequately provided for, shall include a 10 foot by 25 foot loading space with 14 foot height clearance for every 20,000 square feet or fraction thereof in excess of 3,000 square feet of building-floor-use for above mentioned purposes, or for every 20,000 square feet or fraction thereof in excess of 3,000 square feet of land-use for above mentioned purposes. These requirements may, upon appeal, be increased, modified, or waived by the Board where, in its judgment, the conditions or circumstances provide substantial reasons to justify such action.

CHAPTER III
 PHYSICAL REQUIREMENTS OF PARKING
 FACILITIES

SPACE REQUIREMENTS FOR PASSENGER CARS

Of the 70 cities reporting zoning ordinances, 31, or 44 per cent, submitted answers to the question: "How many square feet are required or are considered necessary to provide storage space for a private car?" The answers to this question varied over a wide range, as shown in Table IX.

TABLE IX
 OFF-STREET AREA REQUIREMENTS OF CITIES TO STORE ONE
 PASSENGER VEHICLE

SQUARE FEET PER CAR	NO. OF CITIES REPORTING	PER CENT
125	1	3.2
126	1	3.2
144	1	3.2
150	3	9.7
160	3	9.7
180	2	6.4
200	13	42.2
220	1	3.2
240	2	6.4
250	1	3.2
300	2	6.4
400	1	3.2
Total	31	100.0

Two hundred square feet per vehicle is the most common requirement and this was found in cities of all sizes.

Several cities, particularly those with lesser area requirements, have ordinances which require smaller storage areas and "ade-

quate space for entering and leaving." An ordinance so worded leaves the final decision to the land user, who in many cases does not have a clear understanding of the requirements of a vehicle. Since the land user is interested in reducing costs, he will, in all probability, allow an absolute minimum of space for such maneuvering, and when the public uses the facility it will require more space which will be obtained at the expense of storage area. Thus, the capacity of the lot is decreased. A better plan is to base the requirements on a definite number of square feet for each parking space. This overall figure should be sufficiently large to insure ample room for maneuvering. It must also be remembered that requirements vary widely for different shaped areas and different parking arrangements.

LOCATION OF PARKING WITH RELATION TO BUILDING SERVED

Of the 70 cities reporting zoning ordinances, 42 or 60 per cent, have definite restrictions concerning the location of the parking facility in relation to the building served. Of these cities, 24, or 57 per cent, require the parking facility to be located on the same parcel of land as the building. The remaining cities

TABLE X
DISTANCE FROM BUILDING AT WHICH OFF-STREET PARKING
MAY BE PROVIDED

DISTANCE IN FEET	NO. CITIES REPORTING	PER CENT
Same land parcel	24	57.0
200	2	4.8
300	9	21.4
400	1	2.4
600	2	4.8
800	1	2.4
1100	2	4.8
1500	1	2.4
Total	42	100.0

allow the parking facility to be located at distances up to 1,500 feet from the building served. This information is summarized in Table X.

An interesting relationship is shown in Figure 11 between the size of cities and the maximum distance from the building to be served at which parking facilities may be located. In 77 per cent of the cities with populations from 10,000 to 25,000, the parking facility must be on the same lot as the building served. In the other cities in this population group, the maximum

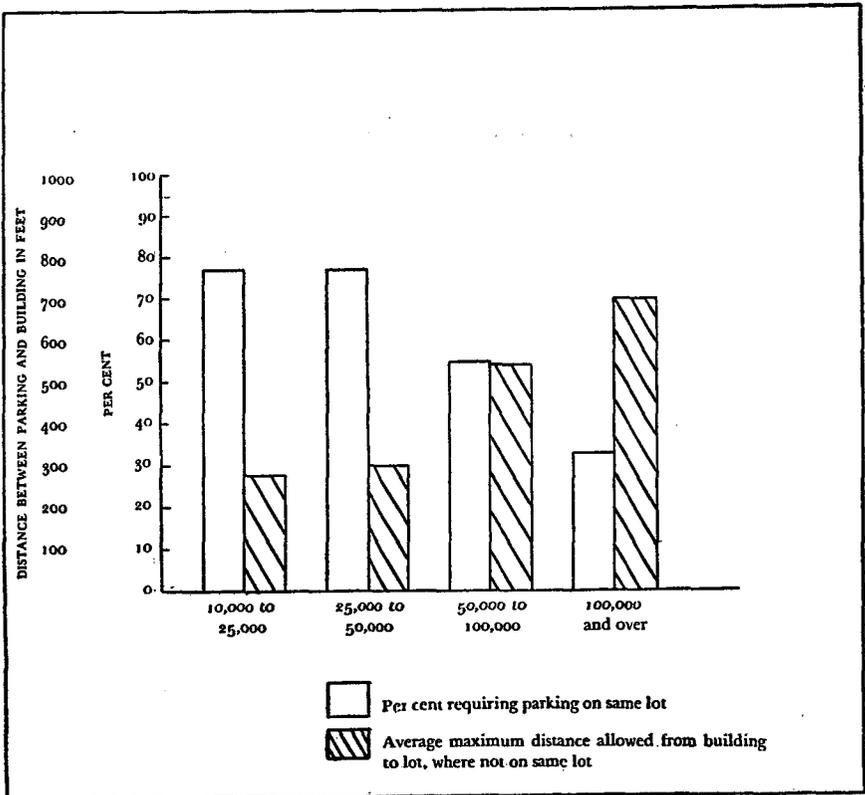


FIGURE 11
Location of parking related to size of cities

distance which the buildings and the parking facility may be separated is 300 feet—the average is 275 feet. Cities with populations from 25,000 to 50,000 require in 77 per cent of the cases parking on the same lot as the building served. All the other cities in this group provide that parking must be within 300 feet of the generator. Cities with populations from 50,000 to 100,000 require parking on the same land parcel in 55 per cent of the cases.

One city allows parking to be provided within a radius of 1,000 feet, but the average of the maximum distances allowed away from the building served is 540 feet. Thirty-three per cent of the cities with populations 100,000 and over require parking on the same parcel of land as the building to be accommodated. The maximum separation permitted is 1,500 feet. The average of the maximum distances permitted between a building and its parking facility is 700 feet.

CHAPTER IV

ZONING APPLIED TO EXISTING BUILDINGS

PROVISIONS MADE FOR BUILDINGS IN USE WHEN ORDINANCE ENACTED

Of the 70 cities reporting ordinances requiring off-street parking or loading space in connection with buildings, no city has passed an ordinance which is retroactive and affects buildings already in existence at the time the ordinance was passed. Greenville, South Carolina, however, has approached this condition by setting a maximum period of eighteen years from the date of the ordinance during which buildings may continue to exist as non-conforming land use.

Many cities provide that if any building is "substantially" altered or repaired, the parking provisions must be complied with.

This method of attack on the parking problem has been recommended. Mr. Nathan Cherniack of the Port of New York Authority recommended the adoption of an ordinance requiring owners of existing property to provide adequate parking and loading facilities within a period of five to ten years after the adoption of the ordinance. "Despite this five to ten year period of grace," explains Mr. Cherniack, "the effect of this ordinance would be electrifying. An incentive will have been created and definite responsibility automatically placed on the shoulders of the existing property owners. They could not 'pass the buck.' Smart property owners would immediately obtain options on choice parking locations. They would put engineers and architects to work at once to use their ingenuity in incorporating the new parking and truck loading space with existing

properties, to yield maximum revenues from higher rentals on their joint use."¹⁰

LEGALITY OF RETROACTIVE ORDINANCES

No legal decisions have been found regarding this type of retroactive zoning ordinance. There have been decisions, however, on other types of retroactive zoning regulations. One of the earliest of these cases involved a zoning ordinance which divided a city into residence districts, from which the brick industry was excluded, and other districts in which such industry might be carried on. Under this provision, an existing brick yard was ousted from the prohibited district. The court declared that the owners could continue to excavate the clay but they must take it elsewhere to be burned into bricks.¹¹ This retroactive form of zoning has not been employed to an appreciable extent, for it was deemed best to allow existing non-conforming buildings and uses to remain, *on the ground that lawful investments should be protected.*

This difficulty would not likely be encountered in the application of retroactive zoning regulations to the provision of off-street parking facilities; the very purpose of such facilities is to protect investments and stabilize land values. The provision of adequate parking facilities is a key factor in halting the downward trend of land values in central business districts of cities.

AID TO EFFECTING ZONING

If property owners experience difficulty in providing such facilities, the city might aid them in any one or more of the following ways:

- (1) permit such parking spaces to be located within certain maximum distances from existing properties;

¹⁰*A Statement of the Parking Problem*: Nathan Chorniack, presented at the Annual meeting of the Highway Research Board, 1945.

¹¹*Hadacheck v. Sebastian*, 165 Cal. 416, 132 p. 584, 239, U. S. 394, 36 S. Ct. 143 (1915).

- (2) plan for property owners block or community parking spaces and truck loading platforms;
- (3) through enabling legislation, utilize their right of eminent domain to acquire properties and resell them to property owners so that they could meet requirements of the ordinance.

APPENDIX

A STUDY OF ZONING REGULATIONS FOR OFF-STREET PARKING AND LOADING FACILITIES

July.....1946

PASSENGER CARS

1. City..... State..... Population.....
2. Does your city have zoning regulations, ordinances, or other land-use controls which require the provision of off-street parking spaces in connection with any of the following:

	Yes	Effective Date	No
a. Single-family dwellings
b. Multiple family dwellings
c. Hotels
d. Hospitals
e. Theaters
f. Restaurants
g. Places of public assembly (school, auditorium, etc)
h. Retail stores
i. Office buildings
j. Wholesale houses
k. Industrial buildings
l. Other (indicate)
3. What provisions were made for buildings already built at the time regulations were adopted?.....

4. How are the necessary number of spaces designated (one per family, floor space, number of offices, number of seats, etc.) for each of the following:

a. Single-family dwellings

.....

b. Multiple-family dwellings

.....

c. Hotels

.....

d. Hospitals

.....

e. Theaters

.....

f. Restaurants

.....

g. Places of public assembly (school, auditorium, etc.).....

.....

h. Retail stores

.....

i. Office buildings

.....

j. Wholesale houses

.....

k. Industrial buildings

.....

l. Other (indicate)

.....

- 5. How many square feet are required or are considered necessary to provide storage space for a private car?.....
- 6. If off-street storage spaces are required, must they be located on the same parcel of land as the building? Yes..... No.....
- 7. If "no", what is the maximum distance at which storage spaces may be provided?.....
.....

COMMERCIAL VEHICLES

- 1. Does your city have zoning regulations which require the provision of off-street freight loading spaces in connection with any of the following:

	Yes	Effective Date	No
a. Hotels
b. Hospitals
c. Retail stores
d. Office buildings
e. Wholesale houses
f. Industrial buildings

- 2. How are the necessary number of loading spaces determined (number of stories in building, gross floor area, etc.) for the following:

- a. Hotels
-
- b. Hospitals
-
- c. Retail stores
-
- d. Office buildings
-

e. Wholesale houses

.....

f. Industrial buildings

.....

Please attach a copy of your regulations or ordinances pertaining to the provision of off-street storage and loading spaces.

.....
Name

.....
Title

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