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MAJOR STREETS AND PARKING

IOWA CITY, IOWA

Preliminary Report

MAJOR STREETS AND PARKING

Iowa City, Iowa

CITY PLANNING AND ZONING COMMISSION

Harland Bartholomew and Associates
City Planners
St. Louis, Missouri

February 1960

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February 1960

City Planning and Zoning Commission
City of Iowa City, Iowa

Gentlemen:

In accordance with our agreement we are pleased to submit the following preliminary report upon "Major Streets and Parking", another in the series of reports comprising the Comprehensive City Plan.

In conducting the studies and developing the plans, we had the benefit of much basic data concerning traffic and parking contained in the Street Traffic Plan prepared for Iowa City in 1954 by Associated Consultants of Evanston, Illinois. This data was supplemented and brought up-to-date by numerous traffic counts and additional parking surveys. We believe that the recommendations contained herein will provide a sound basis for the orderly expenditure of funds to improve the present street system, and to meet the demands of both traffic and parking in the future.

Many local officials and citizens assisted us in conducting the surveys and preparing the plans and report. For this aid and cooperation, we wish to express our gratitude and appreciation.

Respectfully submitted,

HARLAND BARTHOLOMEW AND ASSOCIATES

By Eldridge Lovelace

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INTRODUCTION

Streets and the traffic upon them are an important part of every community. Both have become major objects of consideration and attention; nonetheless, the problems relating to movement through and between different sections of the city are becoming generally more serious and pressing. On the one hand, it has become increasingly difficult to accommodate the growing numbers of vehicles without unreasonable amounts of congestion. On the other, an equal problem is presented in the protection of residential neighborhoods from the adverse effects of extraneous traffic.

These conditions are caused partly by the multiplicity of street functions, partly by the past lack of foresight in planning the system, and partly by unavoidable outmoding of the original streets. Streets and highways serve a number of generally related, but sometimes conflicting, functions. One is to provide for the movement of people and vehicles, primarily the latter; another is to afford access to the abutting property; a third is the provision of space for vehicular parking. Street rights-of-way are commonly used also for the location of essential utilities such as sewers, water mains, and electric lines. In order to maintain adequate capacity for movement, parking may have to be prohibited, and even in some cases, access may be restricted, as is done on the modern expressway or parkway. The original street system was designed for the horse-drawn carriage; neither the development of the motor vehicle nor its great impact on the community could have been foreseen; yet the present-day city is faced with the problem of converting these streets to adequate motor trafficways. Strangely enough, our "horse and buggy" pioneers usually provided wider street rights-of-way than has been the practice subsequent to general use of the automobile.

Because of the situation and importance of the State University of Iowa and the location of the Iowa River, the traffic problem in Iowa City is quite complicated for a city of this size. Additional river crossings and street capacities are needed; the fine campus of the University must be protected; yet easy access to and from the University, as well as to and from the business district, must be provided as the

city and the University continue to grow. In addition to the normal day-to-day circulation, traffic volumes in the city and especially in the University area are greatly increased at certain periods by the numbers of visitors, as well as local citizens, attracted to football games and other special events on the campus. Further, considerations of parking in the central business district relate to street capacity and to the University as well as to the continued success of downtown business.

The street plan should provide for the movement of people and goods - not just the movement of vehicles. The problem of accommodating traffic, therefore, necessarily includes the provision of space for parking; if it cannot be stopped at its destination the automobile is of no use for transportation. Substantial parking areas are needed at such terminal points, particularly on the University Campus and in the central business district. Iowa City has already provided an exceptional amount of off-street parking facilities for a city its size, but more spaces are needed now and still more will be needed in the future.

To be convenient, as well as adequate for the volumes of traffic, the street system must be designed as an integral part of the Comprehensive Plan - not as a separate entity. Traffic volumes will be influenced by the location and intensity of residential neighborhoods, by commercial centers, notably the downtown district, by the industrial areas, and by the University and its activities. The major street plan proposed herein has been devised to serve the future community of some 70,000 persons arranged in general accord with the land use plan described in a previous chapter.

The revamping of existing streets to meet adequately the needs of the future is necessarily slow and expensive, even though new arteries of proper location and width can be easily provided in areas yet to be subdivided. Consequently, the major street plan is a long-range plan to be carried out gradually over the next twenty-five years or more. The means of accomplishing this lies in the scheduling of the major

street improvements in a specific capital expenditures program, based on the priority of need and the available finances. Such a program - to cover the first five-year period - will be prepared in the final phase of the current comprehensive planning program. The Iowa State Highway Department will doubtless be of assistance in financing certain of the more important projects also.

PRINCIPLES AND STANDARDS FOR THE STREET SYSTEM

Experience has shown that the most desirable, efficient and economical way to handle urban traffic is to designate and develop a relatively few "major" streets to accommodate the preponderance of traffic movements. These major streets, through direct alignment, high standards of improvement and appropriate traffic controls, can be made to attract and facilitate the traffic. The remaining "minor" streets can then be relatively narrow, lightly paved and even indirect in alignment so as to discourage traffic in residential neighborhoods and to promote residential quiet, privacy and safety.

Major Streets

The major streets normally constitute about 20 percent of the total mileage of the street system but when properly arranged and developed may handle as much as 80 percent of the total traffic. There are several types of streets in an integrated trafficway system, but all of these can be classified generally as performing one of three or four main functions. The most important arteries from the standpoint of traffic volumes are the radial thoroughfares which lead to the central business district and the University from the various residential areas, some of these continuing into the country as state highways. Other major streets serve as channels of communication between the different residential sections and between the residential and industrial districts. These cross-town arteries may function in part as feeders or distributors of traffic into the radial streets. Still another important major street function is the carrying of through traffic around points of local concentration such as the central business district or even the urban area as a whole. The bypass routes may consist of partial or complete loops or circumferential thoroughfares. Theoretically, these different types of major trafficways would form a pattern similar to the web of a spider, with the streets spaced between one quarter mile and one mile apart and dividing the principal residential sections into cells or neighborhood units.

The major streets should be wide and direct in order to invite and accommodate the vehicular movements. The width of the street should be related to the volume of traffic, major streets in Iowa City requiring two to four moving lanes, depending on the specific street location and function, to accommodate the expected peak hour volumes. The average surface street can handle from 400 to 600 vehicles per lane per hour, depending on location, curb parking, the timing of signals and other factors; major streets where access is limited or where movement is little impeded by cross streets and traffic signals, can handle substantially more. At the peak hour, one-half to two-thirds of the total traffic is in one direction so that a street with two moving lanes could carry, therefore, from 600 to 1,000 vehicles per hour, and a street with four moving lanes could carry 1200 to 2000 cars per hour.

For purposes of major street design, traffic lanes should be at least 11 feet in width, and preferably 12 feet, where the latter is possible, as in the development of new arteries. A four-lane pavement of 44 feet can be constructed on a 66-foot right-of-way (leaving 11-foot sidewalks), but a right-of-way of 80 feet is more satisfactory and desirable, particularly through residential sections, and 80 to 100 feet is needed where curb parking is permitted, along with four moving traffic lanes. Under the latter conditions, the total pavement width should be 60 feet or more.

Minor Streets

Once an adequate major street system is created, minor streets need to serve only the abutting property. In order to discourage through or fast moving traffic, these local access streets should be indirect in alignment. A pavement width of 26 to 30 feet is adequate. This permits only one lane for movement when cars are parked on both sides, but with most parking off-street, moving vehicles can easily weave between the few parked cars when travelling at the very slow speeds appropriate to residential areas.

EXISTING STREETS AND TRAFFIC

The existing street system had its beginning with the plat of the original city well over one century ago, the present Iowa City evolving plat-by-plat during the succeeding years. Considering the conditions of the past, it is not at all surprising that many street inadequacies and traffic conflicts now exist - in fact, the original streets are in some respects better suited to traffic than some of the much later additions. Thus, the downtown streets are generally wider and better aligned, except for the river crossings, than many of those to their south, southeast and west.

Present Regional Highways

The relationship of Iowa City to other cities in this part of the state and the network of highways serving the city and nearby municipalities are shown on Plate 1. The widths of the bands on this map measure the volumes of daily traffic flow in 1957, the sizes of the dots the city populations.

Four state or federal highways enter Iowa City in seven directions, the two most important of these, U. S. Routes 6 and 218, traversing the area in southwest and then in southeast and south directions. Thus, U. S. 6 connects the city to the Davenport-Moline area about 50 miles to the east and to Des Moines in central Iowa about 100 miles to the west. U. S. 218 leads to Cedar Rapids and then to Waterloo to the north, but only through much smaller communities to the south. State Highway 261 joins U. S. 151 northeast of Cedar Rapids, a major route to Dubuque. State Route 1 leads only to the much smaller City of Washington but serves rural territory in Johnson County and the counties to its east and south. In addition, the new Interstate 80, leading from Davenport to Des Moines and the points beyond, will pass immediately to the north of the city.

The two federal highways carried considerable traffic in 1957, particularly where the routes are combined to the northwest, with from 6000 to 7000 vehicles daily west of Coralville. This traffic volume was almost as great as the largest highway traffic volumes in the vicinity of Cedar Rapids and Davenport. Travel on each of the highways naturally

lessened after they separated to the west, but even so each route carried over 3000 vehicles per day. The volumes on U. S. 218 to and from the south and on State Route 216 averaged about 3000 vehicles per day. Daily traffic on State Route 1 amounted to 2500 vehicles or more to and from the southwest, but was relatively light to the east. Because so much of this highway traffic, particularly the heavy volume over Highway 6 to and from the northwest, is routed through the center of Iowa City, utilizing the Iowa Avenue and Burlington Street bridges, or following South Riverside Drive, the reason for some of the current critical traffic problems is obvious. Moreover, truck traffic is routed over the Burlington Street bridge and Burlington Street to Dubuque, where it proceeds northward through the business area.

Existing Street Conditions

Iowa City is more fortunate than many cities of its size in the width of street rights-of-way, especially in those portions of the city east of the Iowa River. For example, the downtown streets are generally 80 to 100 feet, which ample widths apply, in fact, to practically all of the streets as far north as Brown and as far east as Dodge. These conditions are not equally true west of the river, however; only the main artery, U. S. 6, has a width of 100 feet or more on that side.

Pavement Widths

Existing pavement widths are shown graphically and by actual width on Plate 2. Wide pavements are found on the two main legs of U. S. Highway 6 and on certain downtown streets, but are not presently well related otherwise to an integrated major street system. Iowa Street has a width of 60 to 70 feet or more throughout its length; Washington Street has a pavement of 70 feet in the blocks on either side of Dubuque and of 50 to 60 feet as far east as Governor; Clinton Street has a width of 64 to 70 feet for three blocks in the central business district proper and of 50 to 60 feet otherwise from Church Street to the Rock Island Railroad, but the other wide pavements are relatively short. For example, the pavement on Burlington Street is 50 feet wide from Madison to Gilbert, but narrows to 36 feet between

Gilbert and Summit and to only 30 feet east of the latter. Washington Street is also relatively narrow, only 30 feet, between Summit and Muscatine Avenue. Dubuque is more adequate, ranging from 40 to 50 feet from the Rock Island line on the south to Park Avenue, with a width of 45 to 50 feet between Burlington and Market.

The majority of streets in the city have pavements ranging in width from 20 to 40 feet. These include a number of streets of considerable traffic importance such as Dodge, Muscatine Avenue, Church Street and Park Road. Dodge Street in particular is well located strategically for the carrying of traffic, yet has a pavement of only 30 feet. Muscatine and Church Streets are also 30 feet; the pavement on Park Road is only 24 feet. Riverside Drive ranges in width from 24 to 30 feet.

Few streets in the city are paved at widths of less than 20 feet, and these are generally of no traffic importance. The exception is State Route 1, which is quite narrow - only 18 feet - throughout its rural sections.

The causes of Iowa City's current traffic problems are made obvious by Plate 2. The discontinuity of the street system around the Old Capitol Square, the focusing of traffic into the central district by the bridge crossings of the river, and the indirectness and awkwardness of approaches from the west are all indicated by the street pattern.

Street Grades

Existing street grades are indicated by symbols on Plate 3. Because of the rolling-to-rough topography in parts of the Iowa City area, gradients are relatively high in some instances, even though the grades are not generally prohibitive. These slopes occur mainly in the areas to the west of the Iowa River and at the north edge of the city. Thus, many of the grades of the minor streets adjoining Park and Rocky Shore Road are 10 percent or more, two of these, on Magowan and Ferson Avenues, exceeding 15 percent. The latter slope is rather severe. Brown Street east of Dubuque is also steep for a short distance. The transition from the river level to the higher land is

reflected in the grades of the majority of east-west streets east of the river. Thus, each of the streets south of the Old Capitol has a slope of five to ten percent for about one block; those to the north have slopes of ten percent or more, the grade of Bloomington exceeding fifteen percent. On the other hand, the preponderance of the street grades are less than five percent, and consequently relatively flat.

Traffic Volumes

During the fall of 1959, traffic counts were made by means of automatic counters on all the present main traffic arteries in Iowa City. In order to measure the daily and hourly traffic fluctuations, master counters were placed at the Burlington Street bridge and on North Dubuque for the duration of the traffic survey. The peak period occurred generally between 4:30 and 5:30 p.m.; the maximum traffic flow constituted about 10 percent of the 24-hour volume on North Dubuque and slightly over 12 percent of the total daily volume at the Burlington Street bridge.

Traffic flow throughout the city is graphically shown on Plate 4, which also shows the increase in rush hour traffic between 1954 and 1959. By far the largest volumes were recorded on U. S. Highway 6, where the total vehicles ranged from over 8000 per day west of Coralville to more than 15,000 near the edge of Iowa City. A part of this traffic branched off at Newton Road, the latter accommodating nearly 10,000 cars per day west of Riverside. The heavy movements in the vicinity of U. S. 6, Newton Road, Riverside Drive and the Iowa Avenue bridge are obvious. Some 15,000 vehicles crossed the bridge itself, while more than 10,000 proceeded over Riverside Drive.

Traffic over the Burlington Street bridge was also heavy, but decreased rather rapidly in volume to the east; thus, the total flow was over 13,000 vehicles per day on the bridge itself, a little over 10,000 near Dubuque, about 7500 at Dodge Street, and only 4000 or so in the vicinity of Burlington Avenue. The Benton Street bridge carried about 6500 vehicles daily, the U. S. 6 crossing to the south almost as many. Traffic on Riverside Drive was quite heavy between both legs of U. S. 6, averaging 10,000 vehicles or more, but split almost evenly at the separation of the two highways, each of which averaged about 6000 vehicles.

Of the other major trafficways, both Dubuque and Dodge were well used. Dubuque Street carried over 8000 vehicles per day at the edge of the central business district, about 3000 at the north edge of Iowa City. Dodge Street averaged from 5000 to 6000 or more from Burlington nearly to Summit. The traffic on Iowa Avenue was heavy in the vicinity of the University but relatively light to the east, which accounts for the rapid drop between Dubuque and Dodge, these streets actually being five blocks apart.

The 1954 rush hour traffic volumes were plotted from information contained in the Associated Consultants' report. In general, comparison of peak hour traffic volumes indicates an average increase of 20 to 25 percent during the past five years, although a few streets somewhat exceeded the average and others actually experienced a decline. The latter was caused by the rerouting of traffic over the new U. S. 6 highway location at the south edge of the city, which relieved Burlington and Muscatine Avenues of the through highway traffic. As shown on Plate 4, travel on Burlington remained at virtually its 1954 level on the bridge but decreased slightly from Dubuque eastward. Similar changes occurred on Muscatine, and on Kirkwood. Traffic increases were relatively small on a few other streets such as River, Summit and parts of Park and Dodge, but were substantial on others, including all of Dodge Street north of Burlington, Church Street, U. S. 6 west of the river and Riverside Drive.

Nature and Composition of Traffic Movements

In 1947, the Iowa State Highway Commission conducted a survey of traffic in the Iowa City urban area, primarily to determine the volume and nature of such traffic and its relation to state highway problems. A report containing the data was published in 1953. This information was rechecked and brought up-to-date or supplemented in 1954 as a basis for street and traffic studies conducted for the city by Associated Consultants, of Evanston, Illinois.

The total traffic using Iowa City streets has, of course, many individual destinations and many individual origins. From the standpoint of any considerable generation of traffic, however, the movements may be classified in a relatively few basic

categories. These are: movements from points outside the city to either the central business district or to the University areas; movements from points inside the city to the central business district or to the University areas; movements of traffic passing through the city from and to points outside; miscellaneous local movements between different sections of the city, as between residential and outlying business or industrial areas. Since so many of these vehicles cross the Iowa River, the composition of traffic on the bridges was analyzed in 1954 and found to be as follows:

Movements to University Areas	32.6%
(27.5% from points inside, 5.1% from points outside the city)	
Movements to Central Business District	24.4%
(11.7% from points inside, 12.7% from points outside the city)	
Intra-University Area Movements	6.8%
Movements To and From Other Areas	28.9%
(16.7% from points outside, 12.2% from points within the city)	
External Traffic Through The City	7.3%

Counting the traffic between portions of the University on different sides of the river, almost two out of every five movements on the bridges are generated by the State University of Iowa, about one in four by the central business district. Thus, the University and business area combined account for nearly two-thirds of the total bridge traffic.

The Traffic Problem

The current traffic problems in Iowa City are concentrated generally on the several river bridges and their approaches, particularly at the Iowa Avenue and Burlington Street crossings. These bridges even in

1954 were used beyond their normal design capacities. While some relief has been afforded the Burlington Street bridge by the new U. S. 6 highway to the south, it is still carrying approximately the 1954 volume of traffic. The Iowa Avenue bridge is carrying a larger volume. The problems at both bridges are aggravated by the approaches. The Iowa Avenue bridge requires vehicular turning on both sides of the river - nearly nine cars in every ten turn at Madison - in addition to the large number of pedestrians. The approaches at Burlington and Riverside are complicated by the angles and conflicts at the intersection.

Traffic volumes in Iowa City have increased since 1954 and will continue to increase in the future. Automobile registrations in Johnson County have increased from about 32 cars per 100 persons in 1954 to 36 cars per 100 in 1959 (excluding students and cars at the State University of Iowa). Based on the current trends, the registration would represent about 55 cars per 100 population in 1985 - an increase due to increased ownership alone of approximately 50 percent. Since the urban population, excluding students at the University, is expected to increase from about 26,500 in 1959 to 50,500, or by 90 percent, the total increase in registration would be about 185 percent (1.50 x 1.90 - 100). This would mean an equal increase in total traffic movements in the urban area, not allowing for increased usage of each car (which is actually occurring in most communities also). The number of student automobiles has varied in recent years, but averaged one car for each 2.4 students. At this ratio, by 1985 the number of student cars would double unless the University places some restriction on the use of student automobiles. A policy of restricting student cars, where these are not absolutely essential, as for students housed in areas away from the campus, may not only be desirable but may become imperative in a few years, if the University is to solve its own problems of traffic and parking. These figures do not mean that the traffic on every street will correspondingly increase - the total vehicular movements will be distributed over a much wider urban area - but the traffic on certain arteries, such as those downtown, could nearly double.

Obviously, the existing bridges could not handle double their present load. Relief will be afforded by the new interstate highway north of Iowa City, which will accommodate through traffic and trucks, but at least one new bridge will be needed, nonetheless, in addition to improvement in capacity or in utilization of the various existing structures.

PROPOSED MAJOR STREET SYSTEM

The system of major streets proposed for service of the future urban area is shown on Plate 5. This plan is designed to meet the exigencies of bridge traffic and easy access to the central business and University areas, as well as to attract and accommodate the major traffic movements in all parts of the future community. Two types of streets and highways are proposed: "dominant major streets" that would carry at least four lanes of moving traffic, and "other major streets" that would carry at least two lanes of moving traffic. Ideally, the dominant major streets should have a right-of-way of 80 to 100 feet and a 64-foot pavement, including a four-foot medial strip, if parking is to be permitted - or a 44-foot pavement can be utilized without parking. The major streets should have a right-of-way of 80 feet and a pavement of 44 feet. The latter could then be used when and where desirable for four moving lanes with the prohibition of parking. In some cases where existing right-of-way is narrow and widening is impracticable, a 44-foot pavement for four moving lanes may be constructed on a right-of-way of only 60 to 66 feet.

Interstate and Highway Bypass Routes

A location for the new interstate highway has been selected to the north of the city, as shown on Plate 5. This will be an important highway, leading from Chicago and Davenport to Des Moines, Omaha and beyond. Five interchanges have been contemplated in the Iowa City area, three of these in the immediate vicinity of the city shown on Plate 5: on State Route 261, on old Highway 218 (North Dubuque) and on First Avenue north of Coralville. The other two interchanges are to be on new Highway 218 to the west of Coralville, and on State Route 1 to the east of Iowa City. Each of these local thoroughfares will serve as feeders to the new highway and will, therefore, carry additional traffic induced by the interstate, especially over North Dubuque and Dodge Street - Highway 261 to the north and northeast of the city.

Construction of the interstate will create a new route by which east-west through traffic may avoid the city. This is especially important from the standpoint

of removing trucks from the University Campus and the central business district. The traffic study in 1954 estimated that vehicular movements bypassable to the north constituted about 2-1/2 percent of the total traffic across the Iowa River, and many of the bypassable vehicles are trucks. Because of their size and lack of maneuverability trucks decrease the capacity of downtown streets and their removal is especially desirable from this standpoint as well as to reduce the noise, fumes and other effects. The new interstate will also provide additional portals and more direct entrance to the city for other traffic having destinations in Iowa City and for the numerous visitors attracted by football games and other special events and activities of the University. Because of the five access points, it will be of service also to local traffic, especially to and from the northwest. The traffic flow map indicated the large number of vehicles using Coralville Road - travel for some of these, even locally, would be expedited by using a feeder into the interstate and following the latter to one of the other interchanges, as at Dubuque, closest to their actual destination.

The present east leg of U. S. 6 at the south edge of Iowa City is relatively new. This thoroughfare was constructed to serve, along with part of State Highway 1 to the west, as a south highway bypass of the city, a connection being planned eventually from Highway 1 to U. S. 6 west of Coralville. The territory south of the present leg of U. S. 6 is a potential residential area which is expected to develop considerably in the future. Rather than have this residential area cut by a high-speed highway bypass, it is proposed that the existing route be used primarily as a major local route to serve the residential neighborhoods, and that a new bypass be provided somewhat farther south at the edge of rather than through the future urban community. The new bypass would avoid Highway 1 also, which is now a relatively narrow surface street with access from the adjoining property. The route proposed south of the airport could be made limited access throughout. This new bypass would not only carry the through traffic (estimated in 1954 as some six percent of the total movements across the bridges) but would establish an additional artery for local use, particularly for access to the existing and future industrial area in southeast Iowa City. For this purpose it would require an interchange at the First Avenue extension. Other interchanges

for local access are proposed at Highway 1, U. S. 218 and the present U. S. 6. At the latter a connection is proposed to the existing county road at the edge of East Lucas Township, which would serve as an east bypass of the city leading north to Interstate 80.

Dominant Major Streets

The dominant major streets include the most important radial routes and connections to the new interstate highway together with Riverside Drive, all of which are described briefly in the following. All of these streets already exist except for the proposed new bridge at Market Street, but some of them will need widening or other improvements.

Coralville Road - Extension to Market Street. The most critical current problems are found at the two central bridges at Iowa Avenue and at Burlington Street. A new river crossing is badly needed, but the locating of a new bridge is complicated both by topography and by the University Campus. Because of the heavy traffic on Coralville Road at Riverside Drive, the curvature of the former into Riverside with its resultant poor traffic visibility, and the heavy volume of turning movements (50 percent or more) required at the Iowa Avenue bridge, the more direct routing of U. S. 6 at this point is much to be desired. The grades of the highway, of the railroad paralleling the highway and of Riverside Drive make feasible an extension of Coralville Road across the Iowa River to connect, as proposed, with Market Street. Further, a peripatetic survey of the general area indicates that while the proposed extension encounters a grade on Market Street which is steeper than normally desirable and, though avoiding the existing Fine Arts Building, cuts across part of the University property, it could be constructed with a minimum amount of damage to the campus, in comparison with any other crossing or extension. An existing pedestrian crossing would be affected, but this could be reconstructed either as a part of the bridge or as a separate, parallel structure. Moreover, the new bridge, together with Market Street, would supply a bypass of the central business district and obviate the necessity for a considerable amount of extraneous through traffic to traverse the business area.

The proposed extension would begin some 500 or 600 feet west of Riverside Drive, and with a grade of approximately 3-1/2 percent could be carried under the existing railroad tracks to Riverside Drive. (Removal of the railroad would be desirable and may eventually be accomplished, but unless this is done, the grade separation is essential.)

Market Street. Market Street is appropriately located to serve with the Coralville Road extension as a bypass north of the central area, as well as to constitute with Rochester and State Route 1, a radial artery leading into the center of the city. For the latter purpose it can distribute traffic to the intersecting north-south streets. The right-of-way is 80 feet, but the pavement is relatively narrow and will eventually require widening.

Dodge Street-Highway 261 constitute a radial route from the northeast and provide an entry into the city from Interstate 80. Dodge Street is also well located to serve north-south, cross-town and bypass movements east of the downtown area, and with Benton Street it forms a loop around the central portion of the city. Widening of the pavement is necessary to realize the traffic potential of the street - the viaduct over the C.R.I.&P. Railroad should be reconstructed to provide four lanes also.

Benton Street-Page Street. The existence of the bridge at Benton Street has given it strategic importance in the street system so that it should be improved to serve as part of the loop previously described. This will require some improvement in the alignment as well as widening of the pavement on Benton and Page Streets.

Dubuque Street is currently the most important north-south street east of the Iowa River and, though bisecting the central business area, should continue as a dominant thoroughfare. One of the interchanges for local access to the new interstate highway is to be on North Dubuque. Parking should be prohibited and the pavement should be widened to 44 feet for its entire length. Dubuque should be extended also south of Kirkwood to connect to Highway 6. The property affected by the extension is now vacant; the right-of-way should be acquired in the immediate future before the area is developed. The extension joins a proposed connection to Sand Road.

Burlington Street functions as a bypass and distributor route along the south edge of the business district, constituting also with Muscatine Avenue and Court Street a radial route leading east and southeast. Burlington lacks adequate width for four lanes east of Gilbert. Because of its function as a distributor, Burlington needs additional width through the central area also in order to provide an extra lane for left turning and for storage of waiting vehicles at all intersections.

Riverside Drive is presently an important connecting link between the two legs of U. S. 6, as well as the route of U. S. 218 to the south. Its use is complicated by the turning movements at the various bridges. The widening of the street currently contemplated will make it possible to provide special left-turn lanes on Riverside, which will greatly lessen the congestion caused by turning, and improvement of the bridge approaches from the west to make them more direct will reduce the number of turns. Construction of a new bridge across the Iowa River will both reduce left turns and remove a part of the traffic so that Riverside can more easily accommodate the present and future load. The construction of a pedestrian overpass near the Iowa Avenue bridge, which is contemplated in conjunction with the Riverside Drive widening, will improve conditions for S.U.I. students who must walk across this crossing.

Highway 1 and U. S. 6. State Highway 1 functions as a radial route from the southwest; U. S. Highway 6 has been constructed to serve as a bypass but is located so as to constitute a radial route to and from the southeast. While the tributary areas of these routes are generally undeveloped now (except for the district north of U. S. 6), a considerable future growth is expected in both the southwest and southeast, especially south of Highway 6. As already described, it is proposed that both routes serve essentially the local traffic, a new bypass for other vehicles to be located well to the south at the edge of the future urban area.

Other Major Streets

The remaining streets included in the major street plan are designed to provide the elements needed to create a trafficway network which would supplement the dominant routes to the University, and central business

districts, make easy cross-town communication possible, and, in general, so facilitate travel in all directions through the city that the major streets will attract and hold the traffic without the dispersion now apparent on minor streets. For this purpose, several new arteries or considerable extensions of existing streets are proposed, along with a number of connections and appropriately located existing streets. Proper development of the latter will require not merely their designation, but the improvement of street surfacing and especially the institution of traffic controls to foster continuity of travel.

New Streets or Major Extensions

A minimum number of new streets or major extensions of existing streets are proposed. Two of these are located in the sections west of the river, one to the north, and another at the east edge of the present city.

Sunset Extension. The extension of Sunset southward to Highway 1 and northward to U. S. 6 at Rocky Shore Drive would create with the latter and Park Road a loop connecting the residential and University areas extending westward from the river. Communication between the sections north and south of the University property is now very indirect and difficult, no continuous north-south street existing between Riverside Drive and the county road at the end of Benton Street, a distance of nearly two miles. The local westside traffic now uses Riverside or filters through the hospital area. The extension north of Melrose is proposed near the edge of the golf course, but can be made without serious interference with the course.

Benton Street Extension. Benton now ends at the county road but should be extended to serve the residential neighborhoods anticipated to the west. The curvature southward for nearly one-half mile before direct extension along a new right-of-way west is dictated by topography, which is rather severe in part of the area.

Templin Road Extension. The projection of Templin Road northward from Park Road across the river and then generally eastward to Prairie du Chien is intended to create better access in this northern portion of the community. It would serve the conveniences of the district, however, rather than heavy traffic, and consequently is not urgent even though desirable in the long range future.

First Avenue Extension. There are currently no continuous streets for easy north-south circulation in the eastern part of the city. Because of the topography in the northeast, the few existing streets end at Rochester Avenue. First Avenue is well situated to serve as a major street and is now continuous between the Rock Island Railroad and Rochester. The extension of First Avenue southward to connect to U. S. 6 and to the new bypass would be relatively easy. The extension to the north traverses considerable rugged topography, but can be accomplished, if carefully located; the alignment shown on Plate 5 is necessarily somewhat general - the exact alignment of this route will require a detailed survey. When finally developed, the route will be important since it joins the access road to the new interstate as well as the proposed bypass at the south edge of the community.

Street Conditions

A number of streets in Iowa City would be more serviceable to traffic if they were more direct or continuous. Some of these connections will be relatively easy; others will be somewhat difficult and expensive.

New connections west of the river include the transition between Melrose and Grand Avenues already contemplated. This is designed to improve the approach to the Burlington Street bridge which is now complicated by the several streets intersecting at acute angles. Elimination of the right angle turn in the county road leading south of First Avenue (at the edge of Coralville) is also proposed. This would be south of the existing underpass.

Madison-Capitol-Kirkwood-Seventh and Connections. The majority of the new connections are proposed to create a continuous traffic loop, utilizing Madison, Capitol, Kirkwood, "F" and Seventh Streets. This route would involve three separate connections: (1) between Madison and Capitol south of Prentiss Street; (2) between Capitol and Kirkwood south of Benton Street; and (3) between Kirkwood and "F" Street. The last would be especially useful since it would establish a needed accessway under the C.R.I.&P. tracks which now serve as a barrier to circulation between the residential districts on either side of the railroad. The connection between Kirkwood and Capitol Street, utilizing the

underpass at Capitol, can be made without any considerable building damage, but the transition between Capitol and Madison Streets will be fairly expensive since a number of buildings would have to be acquired. Development of this route would provide a continuous trafficway serving the eastern and southern portions of the present city and communicating with the east edge of the downtown area.

Existing Major Streets

The other major streets on the plan are existing ways which should be designated and, wherever necessary, improved to function satisfactorily as major traffic carriers. The needed improvements include better or wider surfacing, traffic controls to favor continuous vehicular movement, street illumination, et cetera. By concentrating the use of available funds on these streets they can be made more useful and attractive to travel, and, conversely, the preponderance of local streets can then be protected from heavy traffic.

Future Traffic and Street Capacities

The estimated future traffic volumes on the different streets comprising the major street plan, in comparison with their capacities, is shown on Plate 6. These estimates take into consideration: (1) present vehicular movements on the various streets; (2) expected changes in the distribution of population and land uses in the future community of 70,000; (3) trends in vehicular registration with respect to population increases; (4) use of the new interstate route and south bypass for through traffic; and (5) other changes in the traffic pattern, such as the removal of traffic from existing to new arteries and the accommodation on the major streets of a higher proportion of the total traffic.

Certain of the future streets, including Dubuque, Dodge, Washington and Burlington, would be utilized practically to their working capacities under the proposed plan; the majority of the streets, however, would have at least a small additional traffic capacity, and a few arteries would have a substantial excess capacity. It should be emphasized that the capacities indicated are based on the number of lanes proposed under the major street plan and not necessarily on the present pavement widths, although the latter have been used where appropriate, as on Dubuque, assuming the prohibition of parking.

Due to the high capacity of a limited access pavement, the proposed new bypass to the south would have a capacity considerably in excess of its estimated requirement. This artery is believed to be warranted, nonetheless, because of its advantages in complete freedom of movement for the through traffic as well as its convenience to certain local traffic. Initially, the highway could be constructed with only a two-lane pavement, which would be adequate for a number of years. Then, when justified, another two-lane roadway could be added, with an intervening median area, providing for separation of travel in each direction.

Other Transportation Facilities

The motor vehicle, whether truck or bus or private automobile, has continued to gain importance as a medium of transportation of goods and of people. Other transportation facilities are important also, however, and should be coordinated with the various elements of the community pattern as well as with the major street system. The existing transportation facilities in Iowa City are shown on Plate 7.

Highway Transportation

Truck transport is not so important in an educational center such as Iowa City as in a manufacturing community. There are a number of local truck terminals, nonetheless, the majority of these being in the south-central part of the city and in the general vicinity of Coralville. Thus, there are two terminals along Gilbert Street to the south of Burlington and three others in the mixed industrial district generally along the river. Three terminals are located along Highway 1 and U. S. 6 to the west of the river. The remaining truck terminals are located between the railroad and Highway 6 south of Coralville and along First Avenue in or adjoining that community. These terminal locations are generally satisfactory and appropriately related to the central business and industrial areas and to the highway access.

Present truck routes generally follow the state and federal highways where they do not interfere with or adversely affect residential property. The routing of trucks through the University area and along Dubuque, Church and Dodge Streets (State Highway 261), however, is not desirable. These are through vehicles which can be eliminated on completion of the new interstate highway and the proposed bypasses - local trucks can be routed

directly to the highways without any necessity for travel north of Burlington Street. The control over truck operations through the city is accomplished by ordinance designating the specific routes to be used.

Inter-city bus operations are not extensive. The terminal is conveniently located near the University and central business areas at College and Capitol and the routes are as direct as possible to the two legs of U. S. 6 and old Highway 218 (Dubuque).

Railroads and Grade Separations

Freight and passenger transportation are afforded mainly by the Chicago, Rock Island and Pacific Railway, which has a main line traversing the Iowa City area in a northwest-southeast direction and another line running from the center of the city southward. Terminal facilities are along the east-west line south of the downtown area, the freight station being near Van Buren and the passenger depot between Dubuque and Clinton. Grade separations have been made on the main line at Summit, Dodge and Capitol Streets east of the river and at the three main highway or street crossings west of the river, but the railroad still constitutes something of a barrier in the southeast part of the city. Further, the viaduct at Dodge needs replacement, as previously proposed. A grade separated connection between Kirkwood Avenue and Jackson under the railroad immediately west of Lindell has been proposed previously also. The separation of grades at the extension of First Avenue would be desirable, and a grade separation along the proposed east bypass of the city should eventually be accomplished. A new grade crossing would be established by the extension of Sunset Street in the area west of the river, but the volume of traffic anticipated is not heavy and a grade separation is, therefore, not proposed.

A number of grade crossings exist on the line to the south. Because of the relatively low volume of rail operations (for freight service only), the separation of grades along this line is not generally proposed. However, the new bypass highway proposed south of the city should be grade-separated at its crossing of this railroad.

The Cedar Rapids and Iowa City Railway in the northwest is still used for service to the University, but is not justified from this standpoint, and should be abandoned and removed. Should it remain, a grade separation would be needed at the proposed connection between Coralville Road and Market Street; the volume of vehicular traffic which would use this artery should not be subjected to any type of delay. The grade separation is feasible, but abandonment is more logical.

Air Transport

The Iowa City airport is extremely close to the center of the city - the north edge of the airport is only slightly more than one mile from Old Capitol Square, which forces air operation over the downtown area. Present commercial service consists of only two scheduled flights of Ozark Air Lines in each direction daily, but additional service is available from the Cedar Rapids airport, which is fairly convenient to Iowa City. Since the Iowa City airport is well established, has good highway access and can be expanded to the west and south, no change in location is proposed, even though it is closer than desirable to other parts of the city. The existing north-south runway is over 4000 feet, the other two runways about 4000 feet. The runways can be lengthened to one mile or more by extending them to the west and south, if and when desirable.

Carrying Out the Major Street Plan

The carrying out of the major street plan will require state and federal assistance as well as local financing. The first step in carrying out the plan, therefore, should be the securing of general agreement on its proposals among the various agencies and officials. This will include the Iowa State Highway Commission and Johnson County in addition to the city.

The State Highway Commission will play an important role in several respects. This Commission is concerned both with the routing of the state highways through the city and with the construction of such routes, particularly the new interstate highway, and any new bypasses and connections thereto. Further, a part of the municipal expenditures on major streets are financed through funds administered by the Commission. The city itself

should concentrate available funds on the surfacing and other improvements on this arterial street system. More specific recommendations concerning the financing of important projects will be included in the final report on a capital expenditures program.

In the securing of new right-of-way for the major street extensions and connections, the control over land subdivision is invaluable. New streets can be obtained with adequate width and appropriate location without cost to the community and without inconvenience or excessive cost to the developer. The subdivision regulations will be reviewed in the report on housing.

PARKING IN THE CENTRAL BUSINESS DISTRICT

Streets are primarily for the movement of traffic. Nonetheless, extensive use is made of areas along the curb for the parking of vehicles. This is satisfactory - in fact, curb spaces along the main business streets are the most convenient and desirable from the standpoint of the parker - provided the space is not required for movement and the parking itself does not interfere with the traffic. On certain major streets, however, parking must be restricted in order to provide the necessary street capacity.

On the other hand, space for parking is important; the channels for movement lose their value, if, after reaching its destination, the automobile cannot be stopped. The need for such parking space is naturally greatest in the central business district because this is the objective of so much of the total traffic. Further, because of the concentration of the stores and shops and offices in a relatively small area, it is difficult to provide parking facilities which are convenient and attractive to all parts of this concentrated business area.

The parking problem in Iowa City is increased in scope and complexity by the close proximity of the business and University areas; although considerable parking facilities are maintained on the University campus for the use of students and faculty, use is also made of many of the other spaces by students, faculty or visitors. The parking survey conducted in 1954 indicated that approximately one car out of every five parked in the general area from Market to Court and from Van Buren to Front Street was that of a University student or of one of its faculty or visitors.

There are several different types or categories of parkers which must be accommodated within or near the central business district. The most important are the customers and patrons of the district since they determine its economic well being. Many of these need space for only a short time - not more than one hour and frequently for a half hour or less - while the parker runs an errand or two or makes a routine purchase. Others may stay for one or two hours or longer to shop at a number of different establishments or to visit various professional offices. Another category includes

the long-term parkers, mainly employees or owners of the downtown establishments, who may stay for the entire business day or may park and leave at irregular intervals. In addition, there are the students and faculty and visitors to the University; based on the 1954 survey, over half of these stayed from one to three hours, and most of the remainder parked three hours or more.

The short-time parker needs space for parking close to his destination, preferably at the curb wherever possible. Shoppers and patrons in general are reluctant to walk more than a block or two, but will utilize off-street facilities where they are conveniently located and the parking is easy. Insofar as possible University personnel should be provided with parking accommodations on the campus, but they frequently visit the business district also as customers and patrons.

Arrangement of the Central Business District

The general arrangement of the central business district is shown on Plate 8, which reveals the main use of buildings. Commercial enterprises are concentrated in a smaller area in Iowa City than in the average city its size with the bulk of such establishments in only seven or eight blocks along Washington, College, Clinton and Dubuque. It is this concentrated business area that the parking facilities should most conveniently serve. The commerce scattered along Burlington Street consists of filling stations and other uses not actually a part of the central business district. Light industrial establishments are frequently found adjoining or near the edges of the business area; those in Iowa City are located mainly in the southwest portion of the district along Burlington and Madison Streets and along Gilbert and Burlington at the eastern edge of the area.

The close proximity of the University to the retail shops and offices is quite apparent. The University buildings in the Old Capitol Square and along Iowa Avenue and on Washington east of Capitol Street constitute direct continuations of the business area. Other public and semi-public buildings are scattered around the edges of the district; these consist of various churches, institutions and clubs, as well as the City Hall and Post Office.

Residences occupy most of the area south of Burlington Street, particularly from Capitol to Linn, and the property at the extreme northeast of the district. There are relatively few dwellings in the remainder of the downtown area, and these are mostly between Madison and Clinton along the north side of Burlington. The latter area is relatively close to the business core.

The intensive use which is made of the concentrated retail area is indicated by the coverage of commercial structures. Except for the City Hall property, the land on both sides of Washington Street west of Linn is virtually 100 percent covered by buildings, and the two other blocks immediately to the west are almost completely covered. The frontage along College Street west of Dubuque is likewise intensively occupied. Further, much of the space not occupied by buildings around this business core is occupied by off-street parking lots.

Existing Parking Facilities

A survey was made of the number of parking spaces and of the parking space turnover and vacancies in the fall of 1959. The distribution of these spaces and the type and extent of curb parking regulations are shown on Plate 9; the numbers of spaces of the different types are listed in Table 1. The miscellaneous small areas listed in the table were too small to show effectively and were omitted from the map.

Within the area encompassed by the map there are 2,631 spaces available to the general public and 889 parking accommodations provided on the University Campus. Of this total, about two thirds - 1,561 spaces - are provided on-street, and one third - 1,060 spaces - in off-street parking lots. Nearly two-thirds of the latter are in the various municipal parking areas. Except at the southwestern and eastern extremities of the district, all the spaces north of Burlington are metered, over half of the total for one and two-hour periods, which helps to increase the turnover of convenient parking stalls and provides revenue for additional off-street parking facilities. The number of curb parking spaces is somewhat less than those recorded in the 1954 traffic and parking survey, although the number of off-street spaces, including the University areas, is over 50 percent higher. The 1954 survey area was a little larger, which accounts for the difference in curb parking; there has been a substantial increase in the Municipal and University areas.

The existing parking facilities in Iowa City represent 72 spaces per 1000 persons in the urban area, including students at the University. Of these, 43 are at the curb and 29 are in off-street areas. Recent studies of parking facilities made by the Bureau of Public Roads indicate that the average of 16 cities ranging in population between 25,000 and 50,000 persons had 45 spaces per 1000 at the curb and 31 spaces off-street, a total of 76 spaces per 1000. On this basis, existing facilities in Iowa City are very close to the average. However, excluding students at S.U.I., the city has approximately 99 spaces per 1000, which would be somewhat above the average.

While many of the off-street parking areas are small - and four of the municipal lots have fewer than 40 spaces - the majority are well located from the standpoint of convenience. In general, the municipal lots are concentrated in the sections to the east of the business core; the customer, employee and miscellaneous private areas are somewhat scattered, mainly in the blocks from College to Burlington.

The University parking facilities are concentrated in the vicinity of Front and Madison Streets south of the Iowa Avenue bridge, the several other areas within the district covered by Plate 9 being limited in capacity. In addition to the five lots shown, a number of parking areas are provided at other locations on the campus beyond the limits of the central business district drawing.

Use of Existing Facilities

The use of existing parking spaces was surveyed from the standpoint of the length of time parked and the availability of space. The survey was conducted on Thursday, Friday and Saturday of a typical October week by making half hourly checks of the automobiles parked at the curb in the various metered and unrestricted areas and in addition, recording the number of vacancies at different times in the off-street lots. The average duration of parking is shown by Table 2.

In the area as a whole, not quite two cars in each five parked less than one-half hour, about three out of five less than one hour. About one car in each

three remained from one to four hours downtown, but only a relative few stayed over four hours. The percentages of short-term parkers are a little below average in Iowa City - in Fort Dodge, Iowa, for example, about one-half of the total parkers remain a half-hour or less and about two-thirds stay less than one hour (based on a June, 1959 survey). The parking durations in Iowa City are influenced by, among other things, the longer term parkers on Iowa and Jefferson Street near the University.

As would be expected, the ratio of short-time parkers was much higher in the one-hour metered zone. Slightly over one-half of the total vehicles stayed less than 30 minutes and about 80 percent less than one hour in that zone. On the other hand, more than one car in six stayed longer than one hour, violating the time limit. Approximately one car in each eight violated the parking limit in the two-hour metered zones.

The extent to which existing parking facilities are used in Iowa City is reflected in the current meter revenue. Meter collections in 1958 aggregated $132,836 for on-street spaces and $25,429 for off-street lots; a total of over $158,000. In the first eleven months of 1959, the collections for on and off-street facilities totalled over $145,000. Due to the development of additional off-street spaces as well as increases in turnover and use, the revenue has increased steadily during the past five years, having now more than doubled the 1954 figure of $68,437.

Parking Vacancies

The availability of parking facilities in different parts of the downtown area as indicated by vacant spaces is a measure of their current adequacy - experience shows that about one space in each six, 15 percent, should be vacant and available for occupancy at all times in order to provide convenience to the parker and to avoid excessive cruising in search of accommodation. The percentage of spaces vacant block-by-block in the central business district is shown on Plate 10, based on the percentage range.

The critical shortage of parking facilities at convenient locations is strikingly revealed. All of Washington Street west of Linn, all of Clinton north of Burlington and much of College, Dubuque, Linn, and Iowa Avenues, as well as parts of Jefferson, Madison and Capitol Streets had fewer than five percent of the total spaces vacant. Several blocks south of Old Capitol Square and in the eastern part of the district had only five to ten percent of the spaces available. Only a relatively few blocks at the edges of the downtown area had more than 15 percent of the spaces vacant. Several of the off-street lots were almost completely filled also. This was true of both the municipal lots in the vicinity of Gilbert and of the two small municipal areas on College and Washington respectively.

Parking Demands

The parking demand was analyzed from the standpoint of the total number of spaces needed in the central business district as a whole and in the more critical parts of the area. During the peak afternoon parking period, there were 1,338 cars parked on-street, 566 in the various municipal lots and about 325 cars (estimated) in the other off-street areas, some 2,230 vehicles in the district as a whole. Assuming the desirable 15 percent vacancy, this would indicate a need for about 2,560 spaces, slightly less than the present supply of 2,631 spaces in all off and on-street areas combined. Many of the existing spaces, however, are several blocks from the edge of the business core and inconvenient and unattractive to the customers and patrons of the area.

A detailed analysis of parking facilities by areas on the basis of the desirable vacancy of 15 percent indicates that there is actually a total deficiency of about 40 spaces on-street and 30 spaces in off-street lots, or a total of 70 spaces, in the portions of the district where parking is critical (see Plate 10) despite the surplus on a few fringe streets. Consequently, the present parking demand would appear to be about 2,630 parking spaces, if the facilities are to be completely adequate and convenient, and some 70 additional spaces should be in the area generally around the business core.

The parking demand has increased steadily in the city in recent years. Meter collections alone have more than doubled since 1954, although this is a reflection of changes in the supply of facilities, including the additional municipal lots, as well as of increases in demand. Based on the estimates of population growth discussed in an earlier report, Iowa City may grow by as much as 16 percent during the next five years, and assuming an equal increase in the demand for parking, this would require about 3050 spaces by 1965. The 1954 parking study estimated an average increase in demand of about 30 spaces per year, but this appears now to be conservative. A supply of 3000 spaces or more, or about 400 more than at present, has been used as the objective of the intermediate parking program - but should this prove to be too liberal, the program can be adjusted in its actual prosecution.

The long range parking requirements are difficult to determine accurately since the demand will depend on expansion of downtown business and commercial activities as well as on over-all growth. It would appear reasonable, however, to plan for at least a 50 percent increase in the present parking facilities - the supply can then be related to the demand as new facilities are developed, and can even be expanded beyond the 50 percent increase should this be necessary. Based on a 50 percent increase, the future requirement would be about 3950 parking spaces.

Proposed Parking Plan

The proposed parking plan includes recommendations concerning curb parking regulations to improve turnover and use, proposals for off-street facilities to be developed during the next five years, and proposals for off-street facilities to be developed in subsequent periods. This plan is shown on Plate 11.

The proposed changes in curb parking regulations involve (1) extension of the regulations into the majority of blocks now unrestricted; (2) reduction of the time limits in several blocks within the critical parking area; and (3) elimination of curb parking on Dubuque Street. It is proposed that parking restrictions be imposed over the entire area between Court and Jefferson Streets with the exception of Court Street, Van Buren and Jefferson Street east of Gilbert. In general, the

fringe blocks such as those along Madison Street, and along all streets, except Clinton, south of Burlington would allow five-hour parking. These blocks are almost completely occupied throughout the day, the majority with less than five percent of the spaces vacant, so that some restriction is desirable to help make additional spaces available. Extension of the one-hour parking limit is proposed on College east of Clinton, on parts of Clinton north of Washington and south of College Street on Linn Street on either side of Washington and on Iowa Street east of Dubuque. Changes from present three-hour or five-hour regulations to a two-hour limit are recommended in several blocks also. The extension of both one-hour and two-hour parking zones are designed to increase the parking turnover in the most convenient and critical portions of the district. The extension of the one-hour zone along Washington is recommended to accompany construction of the new City Hall on Washington Street.

While ample parking interferes with traffic, the present capacities of downtown streets and the convenience of the diagonal parking are such that no change to parallel parking has been recommended. This may eventually become desirable but is not believed necessary within the near future. However, in order to expedite traffic, curb parking should eventually be prohibited entirely on Dubuque Street, which will eliminate 89 spaces. The elimination of parking on Gilbert Street north of Washington will be necessary in connection with the new Civic Center, and additional restrictions around the Civic Center may become desirable. The restrictions on Gilbert Street would remove 24 existing parking stalls.

Five-Year Parking Plan

Under Iowa law, municipalities are authorized to acquire property and to develop and operate off-street parking facilities, both lots and structures. For this purpose they may use parking meter funds, either directly or to retire revenue bonds; further, except for the maintenance of the parking facilities and meters and related parking or traffic control devices, all the meter funds must be used to finance additional off-street facilities until these are adequate. Consequently, with some $160,000 in meter revenue now derived annually, Iowa City can carry out a considerable parking improvement program.

The existing parking facilities aggregate 2,631 spaces, of which 113 would be lost by the curb parking restrictions and another 80 would be lost by absorption of the municipal lot into the civic center. Assuming a parking demand for about 3,050 spaces within the next five years, this would require a total increase in supply of over 600 parking accommodations.

The proposed parking plan would provide this increase primarily through the provision of additional surface areas with some increase in facilities through better utilization of two existing lots, and eventual double-decking of one of the proposed lots. One of the existing lots to be improved is municipal lot "Q" at College and Gilbert, which can be increased nearly 50 percent in capacity by full and effective utilization of the whole area; the other lot "S" is an existing private lot which now accommodates only 20 cars. Besides existing facilities, four other areas are proposed, as described in the following:

Lot N includes a half block on College Street between Linn and Dubuque containing two separate existing municipal lots. Several of the existing buildings are poor, but the commercial property on the corner at Dubuque will be somewhat expensive. Because of its location only one block from the center of the retail core, this would be very desirable for customer parking, and a structure would eventually be warranted.

Lot J includes a half block on Washington Street west of Clinton. This is also commercially developed except for an existing municipal lot but the buildings are generally poor. Although the property between the present lot and Clinton will be relatively expensive, it has been included because of the strategic location and potential of the area. A structure, possibly including stores on the ground floor, would eventually be justified.

Lot G is also well located for service of the downtown area. A part of this area is now in private parking, but enlargement would permit more effective use and would be relatively less expensive than Lots N and J. A structure to accommodate over 200 cars could be erected on the property near the end of the next five years.

Lot K adjoins a municipal lot on Madison and includes a small, private parking lot on Burlington. Two of the properties to be acquired are old dwellings but the third is commercial. Unlike the other new lots, this would serve primarily for all-day parking.

The aggregate capacity of the proposed lots, including the existing municipal areas, is 1,074 spaces. The new areas would absorb 99 existing private parking spaces, but assuming the others to remain or to be essentially replaced, private parking accommodations in the district would total about 345. With the elimination of parking on Dubuque, et cetera, about 1,440 curb spaces would remain. The total street and off-street accommodations would amount to 2,859 - somewhat short of the estimated demand of 3,050. Near the end of the period, therefore, it would become necessary to erect a structure on one of the surface lots such as Lot G, or to acquire one of the lots designated for eventual development.

Parking Facilities for Eventual Construction

To meet the demand for some 3,950 parking spaces expected eventually, two additional parking areas are proposed, along with the erection of several parking structures. The two new areas are proposed along the north side of Burlington, one between Capitol and Clinton, the other from Linn to Gilbert. The first, Lot L, is an area now occupied mainly by residences; the other includes mixed dwellings and commerce, but the commercial structures would not be much more expensive than the dwellings. The parking structures would be built on Lots J, N, and G and eventually on Lot L.

Assuming multi-level structures, as many as 1100 spaces or more could be provided on Lots J, N, and G combined, an increase of 665 over the spaces provided by these facilities in the intermediate stage. Lot L would be easily adaptable to double-decking and could supply, when necessary, about 300 spaces; the surface Lot P would provide parking for about 160 cars. Assuming retention of all existing spaces the parking plan would then supply parking facilities for about 3,980 cars (2,859 plus 1,125) which is slightly more than the estimated need of 3,950.

While not included in the parking plan, a future two-level parking facility utilizing Iowa Avenue east of Clinton is also possible. Such a facility using the surface and one underground level of parking has been under consideration in the city, and an engineering report which was made to city officials concerning its cost and feasibility found it to be practicable. Allowing for the existing curb parking on Iowa Avenue, an underground-surface structure could provide an additional 130 spaces in the block from Clinton to Dubuque and more than double this if extended from Clinton to Linn. Parking on Iowa Avenue is very strategically located with respect to the shopping area and would be most useful. On the other hand, it would tend to restrict service access to the commercial property along Iowa where there is no alley (although this could be largely overcome in the design of the surface facilities). It would also require the closing of this part of Iowa Avenue, but since the street already ends at Clinton this would not seriously interfere with traffic.

Financial Considerations

Estimates of the cost of the five-year parking program will be made in a later report concerned with capital improvements. An examination was made of current assessed values, nonetheless, and it should be noted that portions of the proposed new facilities will be relatively expensive. From an economic standpoint alone, Lots N and J, for example, would normally require parking structures at the very beginning in order to justify the cost of the land. However, considering the funds to be available in Iowa City for additional parking facilities, the strategic locations of the sites, and the desirability of acquiring appropriate sites as soon as practicable to insure their retention, these have been proposed initially as surface areas. Once, properly located sites of sufficient size have been acquired, the structures can be built later as the demand increases. Even allowing for ample maintenance and traffic expenditures, the city's parking fund will supply well over $100,000 per year for developing additional facilities. Further, each new lot will add to the revenue, until existing parking accommodations are completely equal to the need.

University Parking

As already noted, University students, faculty and visitors add substantially to the downtown parking problem. Some of this parking is necessary and desirable - University personnel are also business patrons and customers. A considerable proportion, however, especially around the edges of the district is directly related to S.U.I. activities. The University has greatly improved conditions in the last few years, now providing 889 spaces in University lots (within the survey area) compared with fewer than 300 in 1954. Nevertheless, additional University facilities would be beneficial in freeing curb spaces, as along Iowa and other downtown streets adjoining parts of the campus, and, in particular, the provision of adequate new off-street facilities should be a feature of the design and planning of every new University building.