

TA  
7  
.1822  
No.76  
Pt. 2  
1926

2011  
20962  
# 76, pt 2

IOWA STATE COLLEGE  
OF AGRICULTURE AND MECHANIC ARTS  
OFFICIAL PUBLICATION

Vol. XXIV  
24

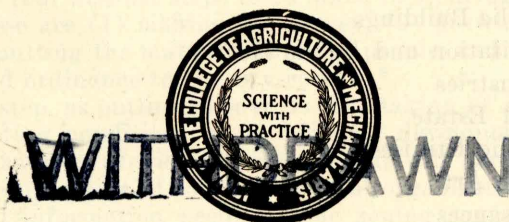
February 3, 1926

No. 36

A SUPPLEMENT TO  
A CIVIC SURVEY OF AN IOWA MUNICIPALITY

A Preliminary Report on a City Plan for Mason City, Iowa

BY ROLLAND S. WALLIS



Bulletin 76  
(Part 2)

ENGINEERING EXTENSION DEPARTMENT  
IOWA STATE COLLEGE  
AMES, IOWA

Published weekly by Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa.  
Entered as second-class matter, and accepted for mailing at the special rate of postage provided for in Section 429, P. L. & R., Act of August 24, 1912, authorized April 12, 1920.



## CONTENTS

| CHAPTER                                          | PAGE |
|--------------------------------------------------|------|
| I. PRELIMINARY INSTRUCTIONS TO SURVEY COMMITTEES |      |
| MITTEES                                          | 3    |
| Zoning                                           | 3    |
| Transportation                                   | 5    |
| Parks and Playgrounds                            | 6    |
| Housing                                          | 8    |
| Street Traffic                                   | 9    |
| Street System                                    | 10   |
| Street Details                                   | 11   |
| Publicity                                        | 12   |
| Law and Finance                                  | 13   |
| Public Buildings                                 | 14   |
| Sanitation and Public Health                     | 16   |
| Industries                                       | 17   |
| Real Estate                                      | 18   |
| Public Utilities                                 | 19   |
| Civic Art                                        | 20   |
| Nuisances                                        | 21   |
| II. SUGGESTED OUTLINE FOR A HOUSING SURVEY       | 22   |
| III. INSTRUCTIONS FOR A STREET-TREE SURVEY       | 23   |
| IV. LIST OF SURVEY MAPS PREPARED FOR MASON CITY  | 25   |
| V. SUMMARY OF CONCLUSIONS ON TRAFFIC CONTROL     | 28   |

## A SUPPLEMENT TO A CIVIC SURVEY OF AN IOWA MUNICIPALITY

A Preliminary Report on a City Plan for Mason City, Iowa

BY ROLLAND S. WALLIS

Municipal Engineer, Engineering Extension Department  
Iowa State College, Ames, Iowa

### I. PRELIMINARY INSTRUCTIONS TO SURVEY COMMITTEES

#### Committee on Zoning

There are four distinct steps to be taken in securing a zoning ordinance. These are (1) making the survey, (2) drawing up the ordinance, (3) putting the matter before the people, and (4) submitting the proposed ordinance to the city council.\*

The first step, as outlined above, is the making of a thorough survey of existing conditions as to building developments in Mason City. As has been previously suggested, it will perhaps be well to secure the cooperation of some other local organization in collecting the detailed information needed. The zoning survey should indicate on a property map (by means of certain suggested notes and symbols) the following information concerning each lot or tract of ground: (1) the use made of each piece of property; (2) the location of the principal building or buildings on each lot or tract of ground (show set-backs and side yards); (3) the height of each principal building; (4) the condition of each principal building.

When such a data map is finished it will constitute a base map showing most of the information as to property development needed in the studies leading to the drawing up of a zoning ordinance. Due to the fact that the data on the maps of the Fire Insurance Service Bureau are available and are being obtained, it will be necessary for the committee to investigate only the areas outside of those mapped by the Bureau (insurance maps are available for many Iowa towns).

In order to bring out the distribution and nature of different sorts of information, several reproductions of the base maps should be made (by photoprinting or lithoprinting) and the following study

\*See Bulletin 65, "Zoning Procedure for Iowa Municipalities," since published by the Engineering Extension Department, Iowa State College, Ames, Iowa.



maps prepared (the use of color in the form of colored pencils will be convenient in differentiating between the different conditions of property development):

(1) A map to show uses of each piece of property. Distinguish between the various types of property development by coloring the lot areas to bring out the following classes of uses: unoccupied lots (white paper); single-family dwellings; two-family dwellings; apartments or tenements (3 or more families); business or commercial; light industry; heavy industry (distinguish nuisance industries); railroad property; parks; and institutions (schools, churches, libraries, clubs, hotels, etc.).

(2) A map to show the heights of buildings. Distinguish between the heights by indicating the number of stories. Show by means of color the following: vacant land (white paper); buildings less than 2 stories, 2-story buildings, 2½-story buildings, and buildings 3 stories high or over. Where buildings exceed 3 stories, the height in stories should be indicated. For all buildings over 3 stories high, collect the information called for by the following form:

| No.* | Occupant | Owner | Street Location | Stories |
|------|----------|-------|-----------------|---------|
|      |          |       |                 |         |
|      |          |       |                 |         |
|      |          |       |                 |         |
|      |          |       |                 |         |

\* Use these serial numbers on the map to identify the property areas.

(3) A map to show the relative depreciation of buildings. By means of contrasting colors, distinguish between land occupied by new buildings, old buildings, and buildings in average condition. The purpose of this map is to indicate graphically the stability of any district as evidenced by the age and condition of its buildings. *New* buildings are recorded where the structures appear new or are especially well maintained—typifying recent tendencies in property development. *Old* buildings, on the other hand, should be recorded where the structures appear old or run-down—where a tendency towards a change in the type of use is indicated or likely. *Average* depreciation should be indicated for all areas where the buildings fall into neither of the extremes just described.

(4) A map to show the location of any set-back lines which may have been established by the city or by covenant. Have any been fixed with a view to future widening?

(5) A map to show occupied and vacant property. Show in black all lots occupied by buildings, leaving vacant lots or tracts uncolored.

## Committee on Transportation

The scope of the various matters to be considered by this committee is broad. Its function will be to consider all the aspects of the problems of transportation of people and goods. This will include an analysis of the local transportation problems, as well as the through or interurban service.

### Railroads

(1) Obtain, from the central office of each railroad, blue-print copies of all its maps, its station plants, yard layouts and profiles that show its property, its track alignment, and its track grades in and near Mason City.

(2) Prepare a map showing in contrasting colors the property of each railroad. Use colored pencils for this and place on the map a key to the meaning of each color.

(3) Prepare a map showing in three colors all grade crossings, all elevated crossings, and all depressed crossings.

(4) Obtain statistics as to traffic delays at grade crossings.

(5) Study the possibilities as to a site for a union station.

(6) Decide whether there are any changes of grade or alignment that would be mutually advantageous to the railroads and the city.

(7) Obtain from each road such data on traffic (passenger and freight), train service (number of trains and cars daily), volume of baggage, and mail and express business as are available. Study the local handling of passengers and freight.

### Aircraft

(8) Describe any local provisions for aerial transportation in the way of landing fields, hangers, repair shops, or service stations.

(9) Obtain from the Chief of Air Service, War Department, Washington, D. C., the following instruction publications: "How an airport should be built," "Four types of ideal landing fields," "General instructions and explanation of diagram and identification numbers," "International system of ground markings," "Questionnaire for landing fields," and "Airway plans for the United States."

(10) Study the advisability of providing better facilities in Mason City.

### Street Cars

(11) List the car routes, and describe the exact route of each.

(12) Show these routes on a city map, using lines of different color to represent the different lines.

(13) Obtain the detailed schedules of all car routes.

(14) Compute and indicate on a city map the various 'time zones' (5-minute intervals) so as to show the combined time of



electric-railway riding at existing schedules and walking at 3 miles per hour. Allow 1 minute for transfers, if any are required to reach any point. Color each time zone in a different color.

(15) Obtain such traffic statistics as are available. Study the hourly, daily, and seasonal variations—as well as any tendency for traffic to increase or decrease from year to year.

(16) Obtain the important facts concerning franchises.

#### Auto-Busses

(17) List the various local and interurban routes, describing the routes as accurately as possible. Indicate on the city map in contrasting colors.

(18) Obtain the detailed schedules of these routes and lines in so far as they are available.

(19) Obtain such traffic statistics as are available.

(20) Study the areas served. Do the local lines supplement or compete with the electric car lines?

#### Markets

(21) Indicate the location of any public markets on the city map.

(22) Tabulate the locations, name, character, capacity, use, etc.

(23) Would any additional public markets be warranted from any standpoint?

#### Committee on Parks and Playgrounds

It has been pointed out that cities grow by the erection of buildings, the streets and blocks multiplying of a necessity. The proper provision of open spaces, such as parks and playgrounds, can be secured only by joint action of those interested. They are not inevitable products of city growth—each generation must add more, so that the recreational areas may keep pace with the growth of the city.

#### Parks

(1) Indicate on the city map the location and area of each public park by coloring the property areas with a green colored pencil. Also indicate any small areas, such as street intersection triangles and (in yellow) the grounds about public and semi-public buildings (except schoolhouses below the high-school grades). Indicate the outlines of any wooded areas in and around the city, other than the areas just mentioned.

(2) Tabulate the available data concerning each park, including: name, location, area, first cost, when acquired, equipment, natural attractions, supervision and care, annual cost, and present land value.

(3) Compare Mason City's park area with those of other cities of about the same population, preferably by platting the park and

parkway systems on maps of the same scale—otherwise, by tabulation of data.

(4) Compute the park area per capita and compare with other cities. Compute the probable area that will be needed in 1950 at the same per capita figure. Also compute the area which will be needed in 1920 at the commonly-accepted area per capita figures.

(5) Make suggestions for future park sites, presenting the various advantages of such sites, as well as any disadvantages.

#### Parkways

A modern park system may be described briefly as a well distributed group of parks connected by boulevards or 'parkways.'

(6) Study the proposed system of parks as to possibilities in the way of connecting by streets or drives deserving of the term 'parkways.' This may involve the creation of new drives or the improvement of existing connections.

#### Playgrounds

(7) Indicate (in red) the location and area of public playgrounds on the map called for in (1). Also indicate (in brown) the grounds of all schools below high-school grades.

(8) Tabulate the available data concerning each of these playgrounds, including: name, location, area, first cost, when acquired, equipment, natural attractions, supervision and care, annual cost, monthly attendance, present land value, etc.

(9) Compare the local playground system with that of other cities of about the same population, as described in (3).

(10) Compute the local playground area per child of school age. Compare this with similar figures for other cities. Compute area needed in 1950 on the present basis, as well as on the basis of commonly-accepted standards.

(11) Make suggestions for future playground sites, based on the distribution of school population, the population density in any district, and any existing tendencies for this density to change.

#### Recreation

(12) Show on the park map, by color shading, the areas not served by Mason City parks and playgrounds. Base this on the assumption that no home should be more than a quarter-mile from the nearest public open space, and that no public open space will adequately serve an area of which it occupies less than 5 per cent.

(13) What private agencies provide free recreation and amusement facilities, and what is the character of the facilities provided? What is the yearly expense, attendance, etc.?

"The study of public recreation and amusements should lead the survey committee not only to ascertain the existing facilities, but also to inquire into the possibilities and resources available which



could be used in extending the service of the local government and of such volunteer agencies as may be available."

(14) Where school buildings are provided with playgrounds, are the children permitted to use them in the summer or outside of school hours, and are they supervised?

(15) Are free concerts provided by the community in parks, playgrounds, and schools?

(16) Have moving-picture shows, theatrical performances, and other amusements been introduced into the public schools? Have games been introduced into the work of the public schools?

(17) What is the total amount of money spent by the city or town for public recreation as compared with the expenditures for fire protection, courts, jails, etc.?

(18) If records of juvenile delinquency are available, indicate on a city map the location of the homes where these cases have occurred.

(19) If record of street accidents to children is available, plot on the map the location where each occurred.

#### **Cemeteries**

(20) Using a distinctive color, indicate the location and area of all cemeteries on the map called for in (1).

(21) Tabulate the available data concerning these cemeteries, including: name, location, area, managing organization, per cent occupied, etc.

#### **Committee on Housing**

A thorough housing survey would be well worth while in Mason City, but, as has been already suggested, some outside organization should be asked to assume the detail work of collecting the information under the general direction of this committee. Additional suggestions will be furnished for the guidance of such a survey. In the meantime, however, this committee should be getting in close touch with the various local phases of the problem.

(1) Prepare several typical lot and block plans to show existing conditions (average and extreme) as to density of housing.

(2) Study examples of good, bad, and average housing. Secure photographs of existing conditions.

(3) Study any relations existing between the character of housing developments and size and width of building lots, particularly as to rear houses, lot division, dark rooms, etc.

(4) Study the provisions of the state housing law (mandatory in cities of over 15,000).

#### **Committee on Street Traffic**

The chief function of this committee will be the collection and study of data bearing on the street-traffic situation. This committee may well cooperate with the Street System committee in planning extensions and improvements to the existing system of traffic streets.

(1) Obtain data as to the maximum dimensions of street vehicles (especially trucks). Obtain the over-all dimensions of the electric street cars, together with data as to overhang of car ends in rounding track curves.

(2) What is the average relation between street width, roadway, and sidewalks in residential, industrial, and business districts?

(3) Analyze traffic conditions, circulation, etc., at awkward street intersections, with a view to suggesting such improvements as would promote better circulation, fewer accidents, etc.

#### **Traffic Counts**

(4) Study the desirability of making traffic counts at congested points. It is probable that such counts will prove advisable, and some outside organization should be called in to help in making these counts. The object of such counts would be to ascertain the volume, character, and direction of pedestrian and the various sorts of vehicular traffic at important street intersections and at various traffic throats, such as bridges, etc. Such counts should be tabulated for each hour of the day, and charted to show graphically the total volumes on each street. In addition to their immediate value, such traffic counts are valuable in making comparisons of the amounts of traffic carried by certain streets year after year. Additional suggestions will be furnished in connection with any traffic counts that the committee may deem desirable.

#### **Traffic Regulation**

(5) Secure copies of all ordinances in force that in any way regulate street traffic.

(6) Study the existing conditions as to the parking of automobiles, especially in the down-town district. Are any down-town areas available for additional parking space? Do traffic conditions on any street warrant making the parking regulations more stringent?

(7) Are there any one-way streets in Mason City?

(8) Are there any changes in traffic devices or regulations that might relieve bad conditions?

#### **Street Accidents**

(9) If records of street accidents are available, indicate on a city map the location of each accident by means of a suitable symbol.



such as an open circle for a serious accident and a black spot for a fatal accident.

(10) Also show these data in tabular form.

(11) Study the relation of street accidents as related to time of day, season of the year, etc.

### **Sidewalk Encroachments**

(12) Make a survey of the down-town district to determine the extent to which business houses, industries, and individuals have encroached on street property by steps, railings, stairways, building projections, or in other ways. Note all obstructions projecting more than, say, one foot beyond the street line. Take photographs of the worst cases, noting the reduction in the effective width of the sidewalks.

### **Committee on Street System**

The street system is perhaps the most important factor in city growth, because it virtually constitutes the framework on which the city is built. The street system may be regarded as a series of traffic streets suitably arranged as to directness, grade, and width to provide convenient means of communication between the various centers of the city, upon which network of traffic streets is built up the residential or secondary streets needed to develop the land to its best use.

(1) What is the total mileage of accepted streets within the city limits?

(2) Are new streets located to fit the topography and the traffic needs—or are they simply extended from the present system?

(3) Indicate the present main traffic thoroughfares on a city map by coloring the street areas with a colored pencil.

(4) Study street grades. Indicate all street grades of over 3% on another map by coloring such street areas with colored pencils, as suggested below:

|                     |                       |
|---------------------|-----------------------|
| 3% to 4%.....Yellow | 7% to 8%.....Purple   |
| 4% to 5%.....Orange | 8% to 9%.....Blue     |
| 5% to 6%.....Red    | 10% or over.....Green |
| 6% to 7%.....Brown  |                       |

Indicate limits of street grades by means of lines across the street areas. Indicate direction of drainage by means of arrows.

(5) On another map show the different street widths by means of different colors for each width. Show on the map a key to the color indication.

(6) Secure township and county maps (from county engineer) showing the relation of the highway system of the district to Mason City and its street system.

(7) Study the traffic-street system with the idea of deciding on new streets—or street extensions desirable, both in the developed and the undeveloped districts.

### **Committee on Street Details**

There are numerous and important matters to be considered by this committee. Much of the city's attractiveness and convenience depends on the thought given the design and placing of its street details.

#### **Street Trees**

(1) A survey should be undertaken next spring to determine the arrangement, varieties, sizes, and condition of all the street trees in the city. This survey could be handled nicely by the local Boy Scouts, and it is suggested that this organization be asked to assume this part of the civic survey. Forms will be supplied (Fig. 59) on which to record the desired information, together with detailed instructions as to the proper procedure.

#### **Street Furniture**

(2) Describe the street-lighting system, particularly the character and distribution of the standard fixtures. Obtain or construct a map showing the location of the lighting fixtures.

(3) Study the matter of street-name signs and house numbers. Are there signs at all street intersections, and numbers on all houses? Are the systems in use satisfactory in every respect?

(4) Are any street-railway waiting shelters or seats provided? If so, list their locations and types.

(5) Are any street drinking-fountains provided? If so, list their locations and types.

(6) Has any systematic effort been made to combine various sorts of street equipment, especially on down-town traffic streets, so as to reduce the number of poles and posts along the curbing?

(7) Obtain photographs of typical street poles (lighting, telephone, and trolley), fire-alarm and mail boxes, refuse containers, hydrants, etc.

#### **Pavements**

(8) Tabulate the present mileage of each type of pavement surface. Indicate existing types of pavements on a city map by the use of different colors for each type.

(9) Compile a record of pavement costs (first and maintenance) per square yard. Compare the costs of different types, considering all factors.

(10) Ascertain whether any definite paving program or policy is being consistently followed. Are the pavements designed accord-



ing to the character of the local district, its grades, and its traffic?

(11) Does the city or do the property owners determine the type of pavement to be used?

(12) How are the car-track spaces paved? Who pays for laying and maintaining this paving? Are the results satisfactory?

### Committee on Publicity

The survey function of this committee will include the collection of general data concerning the city—its growth, early history and tendencies, natural resources, climate, population, etc., as well as the awakening of local interest in the civic survey and in city planning generally through the newspapers and other publicity mediums.

#### History

(1) Study the early history of Mason City—the city beginnings and the factors influencing the location and the early growth of the city.

(2) Obtain copies or a record of all existing city maps, especially those showing early conditions. In the case of rare maps, arrange to borrow for reproduction by some suitable process.

(3) Study the history of the city's development with the special idea of noting changes in the character of the population, the nature of the local industries, etc.

#### Population

(4) Tabulate a consecutive yearly record of total population (also by wards) to show the rate of growth.

(5) Obtain and tabulate all the available population statistics—federal, state, and local.

(6) Study the distribution of population throughout the city area, especially as to races, characteristics, and congestion.

(7) Study the variation of population density in years past, particularly in relation to types of streets, racial distribution, topography, industries, etc.

(8) While the building-development map to be prepared by the Zoning Committee will show in a general way the distribution of Mason City's population, it may prove desirable (if sufficient assistance seems to be available) to prepare a 'spot' map by using dots or small circles to represent on the map a certain number of persons, say five or ten.

(9) Select certain typical blocks and compute the population density (people per acre and families per acre).

(10) By actual canvas of certain districts or groups, ascertain the permanency of occupation by recording the length of residence of families in the city.

### Natural Physical Conditions

(11) Describe the local topography, both of the city area and of the surrounding district.

(12) Describe the natural resources of the district.

(13) Collect data showing the character of the underlying soil of the city area and the region, the extent of the rock floor, the extent of the sub-surface water. The character of the surface soil should be studied with special reference to the sorts of trees and shrubbery best suited to it.

### Meteorological Conditions

(14) Collect local temperature statistics to show the range and daily records throughout a typical year.

(15) Collect precipitation (rainfall) records for a typical year. Obtain rainfall and duration records for unusual storms.

(16) Obtain daily wind records (direction and duration) for several years.

### Photographs

(17) Gradually collect (for historical, reference, and publicity purposes) photographs of existing conditions in and about the city. Such photographs are especially valuable for study and for records where changes are contemplated.

(18) Gradually build up (for historical, reference, and publicity purposes) a collection of photographs showing local conditions in the past—especially during the early history of the city.

(19) Study the various mediums and methods available for use in popularizing the city-planning idea locally.

### Committee on Law and Finance

The survey function of this committee will be to look up the law governing the various phases of city planning—street improvements, parks and playgrounds, community buildings, the financing of municipal improvements, local ordinances, etc., as well as to investigate the financial conditions and resources of the city with a view to the paying for future improvements.

### Financial Data

(1) Obtain the following figures on *valuation*: (a) assessed land and improvements, (b) value of city property, (c) value of other untaxed property, and (d) total value (a, b, and c).

(2) Obtain the following figures on *taxes*: (a) tax rate, (b) proportion of city, county, and state taxes, and (c) number of tax payers.



(3) Obtain the following figures on *revenues*: (a) taxes, (b) licenses, fines, etc., (c) commercial revenue, and (d) total (a, b, and c).

(4) Obtain the following figures on *expenditures*: (a) improvements, by classes—streets, parks, buildings, etc., (b) maintenance, by classes, (c) interest on bonds, notes, etc., and (d) total (a, b, and c).

(5) Obtain the following figures on *indebtedness*: (a) funded for fixed indebtedness, classified by purpose, and (b) borrowing capacity.

(6) Make graphical comparisons with other cities. Use diagrams to show total valuation, taxes, revenues, expenditures, and indebtedness, subdividing each item according to the subdivisions given above.

### Laws and Ordinances

Look up state law and local ordinances governing the various phases of city planning, particularly those mentioned below. The information should cover compilation, application, enforcement, and effect.

- (7) Control of street opening, extension, and widening.
- (8) Maintenance and repair of streets and walks.
- (9) Enforcement of building codes.
- (10) Record of appeals.
- (11) Comparison with other cities and model codes as to heights, percentage of lot covered, size of yards and courts, light and ventilation, size of rooms, use of basements, drainage, water-supply, sewer connections, water-closets and privies, fire prevention and escapes, responsibility of owner and power to vacate, etc.
- (12) Height of buildings.
- (13) Building lines (set-backs).
- (14) Area (proportion of lot occupied).
- (15) Occupancy (no factories in residence districts, etc.).
- (17) Assessments.
- (18) Franchises.
- (19) Regulation of amusements (dance halls, theaters, etc.).
- (20) Public comfort-stations.
- (21) Parks and playgrounds.
- (22) Outdoor advertising (billboards, signs, etc.).

### Committee on Public Buildings

The matter of public buildings—their location, architecture, and setting—is in the average city ungoverned by any systematic plan or procedure designed to bring about efficiency, convenience, and beauty. Mason City, like every other city, has its own problems and its own possibilities. It is hoped that this committee will study

this problem systematically and enthusiastically, to the end that its recommendations will be of obvious merit.

### Public and Semi-Public Buildings

(1) Indicate on a city map the location of all public and semi-public buildings. Shade in some color (other than green) the whole area of the grounds in each case, and indicate the approximate size and location of the buildings. Indicate parks and public recreation grounds by coloring such areas *green*.

(2) Assign a serial number to each indication on the map and tabulate under these serial numbers the following data: serial number, name of the building or grounds, street location, approximate size (in plan), number of stories, type of construction, year erected, and the use made of the structure or grounds.

(3) Study the advantages of the grouping of public buildings, what has been accomplished in other cities, and the possibilities of applying a comprehensive grouping plan to the future development of public property in Mason City.

### Schoolhouses

(4) Prepare a map showing the schoolhouses and the homes of pupils in corresponding colors. Indicate the home of each pupil by a round spot or cross of same color as used to indicate the location of the school.

(5) On the map mentioned in (4), draw circles of  $\frac{1}{2}$ -mile radius, with centers at each schoolhouse site.

(6) Obtain and tabulate the important facts concerning each schoolhouse, including: name of school, street location, grades housed, area of the grounds, area of the play space, number of pupils attending, play space per pupil, number of rooms, pupils per room, etc.

(7) Obtain and tabulate general district statistics, including: ages attending, ages not attending, reasons for not attending, etc.

(8) Note in detail all the available information regarding any proposed alterations, additions, etc., to buildings or grounds.

### Comfort Stations

(9) Show by color on the city map the location of existing public comfort-stations.

(10) Obtain and tabulate the important data regarding existing comfort-stations, including: size, whether below or above ground surface, type of construction, equipment, first cost, maintenance cost, statistics of use, etc. Obtain photographs showing interiors and exteriors.

(11) Study the needs of Mason City as to comfort stations, and make recommendations covering such items as locations, types, sizes, and equipment.



### Committee on Sanitation and Public Health

A good measure of municipal efficiency is found in the existing conditions as to sanitation and public health. A careful study of Mason City's status in these matters is almost certain to reveal the desirability of various improvements in equipment and procedure that will tend to make it a better—a healthier city.

Should sufficient help be available through the assistance of other organizations, a fairly complete sanitary survey might well be attempted. While the detail of such a survey is hardly necessary in connection with working up a city plan for Mason City—such a survey would undoubtedly prove of much value in stimulating public desire for better conditions.

#### Sewers and Sewage Disposal

(1) Indicate on a city map all the sewer mains in the streets. Show manholes as small circles, indicating the elevation in each case in feet and tenths. Between each pair of manholes indicate the size of sewer pipe in inches and the grade in per cent. Indicate sanitary sewers by continuous lines, and combined sewers by dash lines. Indicate (by shading with a colored pencil) all lots served by sewers.

(2) Have any sewers been cleaned? Is there any regular inspection of their condition?

(3) Obtain a description of your municipal sewage-treatment plant, together with figures as to the average, maximum, and minimum amounts treated, degree of purification effected, etc.

(4) Show the location of the sewage-treatment plant on the map showing sewers. Also indicate the location of the outlet line from the plant to the point of discharge.

(5) Describe such privately-owned plants as may have been constructed for the separate treatment of trade sewage.

#### Street Cleaning

(6) Describe the methods and equipment used. Ascertain regularity and frequency of cleaning.

(7) What disposal is made of street sweepings?

#### Garbage Disposal

(8) Describe collection methods and equipment. Ascertain regularity and frequency of service.

(9) What disposal is made of garbage? Describe equipment and methods.

#### Rubbish Disposal

(10) Describe collection methods and equipment. Ascertain regularity and frequency of service.

(11) What disposal is made of rubbish? Is valuable filling material used to increase the value of the city land (say, to create park and playground sites), or is it given to private interests?

### Public Health

(12) Indicate on a city map, by means of suitable colors and symbols, the number and distribution of cases of tuberculosis, typhoid, and other contagious diseases of importance—of infant mortality, etc. Such a map will tend to show up any areas where unsanitary conditions prevail.

(13) Make first-hand studies of such areas as may show up as needing attention. Plat on the map described above the location of each well and privy throughout such areas.

(14) Obtain and tabulate such vital statistics as are available. Make comparisons with other cities.

### Committee on Industries

While a more complete industrial survey would be of great value to Mason City, the suggestions to be made here look only toward the collection of the information directly needed in the planning work. If a more complete investigation is desired the cooperation of other organizations should be secured.

#### Industries

(1) Indicate on a city map the location of all industries. Shade the property areas with colored pencils, using contrasting colors for contiguous areas. Number each area serially, working from left to right and downward.

(2) Obtain and tabulate the following data for each local industry: serial numbers (to agree with those used on map), firm name, street location, date site first occupied, date business opened in city, average number of employees, approximate value of plant, and nature of products.

(3) On another city map show the home of each worker in each of the larger (in point of number of employees) local industries. Indicate homes of workers by dots, crosses, or small circles made with different colored pencils (one color for each plant). Show the plant property in the same color.

(4) Collect available statistics to show the growth of the more important industries as to valuation, output, and number of employees.

(5) If any important industries do not employ steadily throughout the year, show by statistics the fluctuations in the number of their employees.



### Committee on Real Estate

The development of real estate, both public and private, is of fundamental importance in city planning. The work of this committee can be of great value to this project.

#### Land Areas

(1) On a map of the city show the various subdivisions (additions), together with the dates (years) when they were added to the city area. Shade these areas in contrasting colors.

(2) Obtain and tabulate the following data for each subdivision, beginning with the original area and taking up the various additions in chronological order: name of subdivision, date of acquisition, area in acres, area in square miles, per cent of area in streets, per cent of area in other public property, and total city area.

(3) Obtain present areas (in square miles) as follows: (a) total area, (b) area in streets, (c) area in other public property, (d) area in private property, (e) water area, and (f) area owned by city outside its limits.

#### Land Subdivision

(4) Study the influence of the original land boundaries (early ownership) on the layout of the city.

(5) Study the sizes and proportions of typical blocks and lots, together with their effect on building development.

(6) What is the present attitude of real-estate men and the public toward the use of alleys in residence districts?

(7) What are present tendencies in the development of residential streets as to widths of streets, parkings, paving, set-backs, etc.?

#### Land Values

(8) On a city map show by colors the range of values of land. The following divisions and use of colors are suggested:

Values over \$100 per front foot—Black

Values \$50 to \$100 per front foot—Blue

Values \$30 to \$ 50 per front foot—Brown

Values \$20 to \$ 30 per front foot—Red

Values \$10 to \$ 20 per front foot—Orange

Less than \$10 per front foot—Yellow

Acreage land—White

#### Building Construction

(9) Obtain and tabulate records of building permits issued for at least five years. Show the estimated costs corresponding to these figures.

(10) On a city map show the distribution of building permits for each of several recent years, differentiating between dwellings

and commercial establishments by means of symbols such as crosses and circles, and between the various years by using a different color for each year.

(11) Study the future needs for building land to meet increases in population in Mason City by, say, 1950. Represent this prediction graphically.

### Committee on Public Utilities

The survey function of this committee will be the collection of data on the various public utilities of Mason City. This information will be of value in this project and of considerable reference value to such permanent planning organization as may be instituted to carry out the local city plan. With the cooperation of the public utilities, much valuable data may be readily assembled, particularly in the form of maps and statistics.

#### Water-Supply.

(1) Investigate the local water-supply as to its sanitary quality and sufficiency.

(2) Investigate the local water consumption, per cent of services metered, and the amount of water waste. Compare these data with similar figures from other cities.

(3) Investigate the water-supply system with special reference to fire protection, pressure, pumping equipment, etc. Are all the local fire hydrants standardized as to the threads on hose connections (consult the local office of the Iowa Insurance Service Bureau)?

(4) On a map of the city indicate the various lines of water mains. Show sizes of all mains in inches. Indicate by suitable symbols the location of all fire hydrants, valves, etc.

(5) On the map indicate (by light shading in color) all the lots served by the distribution system.

#### Electricity

(6) Describe the street-lighting equipment used in Mason City.

(7) Obtain maps showing street-lighting system, particularly as to distribution, location of units, etc.

(8) Obtain statistics showing present use, together with the growth of the various classifications of uses.

(9) Study the city areas served, with a view to noting any needed extensions.

#### Gas

(10) Obtain maps showing the distribution system (street mains) throughout the city.



(11) Study the city area served, with a view to noting all needed extensions.

(12) Prepare a complete schedule of gas rates.

(13) Obtain statistics showing the present use of gas, together with those showing the growth of this utility.

### **Telephone and Telegraph**

(14) Obtain maps showing distribution system throughout the city.

(15) Prepare a complete schedule of rates.

(16) Obtain statistics showing present use of telephones and growth of the service.

(17) Compare rates of all utilities with those of other cities similarly situated.

### **Committee on Civic Art**

Under the term "civic art" we group a number of topics which have much to do with the appearance of a city. The right sort of civic art joins utility and beauty. Modern city planning is primarily a matter of economics, with beauty a secondary consideration. Beauty, after all, is not a thing to be tacked or plastered on by the square foot—it must be built into the city's structure.

### **City Gateways**

(1) Study the various approaches to the city along the main highways with the special idea of determining their probable effect on the visitor entering the city for the first time. What things are bad, and how may they be improved?

(2) Make a similar study from the point of view of the visitor entering the city by railroad. Are the right-of-ways attractive? Are the stations and their grounds inviting?

### **City Streets**

(3) Has there been any attempt to improve the appearance of business streets by cooperating to secure a reasonable conformity of architectural style and treatment?

(4) Study the design and placing, especially as to appearance, of such street details as lighting standards, street-name signs, mail boxes, fire-alarm boxes, trolley poles, fire hydrants, drinking fountains, billboards, street signs, etc.

### **Monuments, Fountains, Etc.**

(5) Plat on a city map all existing examples of civic art in the form of monuments, fountains, etc. Also secure a good photograph of each.

(6) Make studies looking toward the improvement of such examples.

(7) Consider suitable locations for further civic decorations, as well as any designs under consideration at present.

### **Bridges**

(8) Indicate, on the map referred to in (5), all bridges within the city limits. Obtain a good photograph of each.

(9) Tabulate the more important data regarding each, including: length, span, height above water level, type of construction, etc.

(10) Make recommendations as to location and design of new bridges—as well as to repairs, alterations, and replacements.

### **Parks and Open Spaces**

(11) Study the arrangement and development of existing parks and open spaces with a view to suggesting needed improvements.

### **Committee on Nuisances**

Nuisance conditions vary in different cities, not only in kind but in degree. The function of this committee will be to study such conditions in Mason City, with a view to suggesting such corrective measures as the conditions may demand.

### **Smoke**

(1) If any smoke abatement work has been done in Mason City, obtain all the available records.

(2) Make a study of the present local smoke situation. Take photographic observations to show existing conditions.

(3) What portions of the city are most affected by the smoke nuisance?

(4) Determine the greatest offenders in smoke production.

(5) Consider the advisability of instituting a local campaign for smoke abatement.

(6) If stricter regulation seems desirable, ascertain (in cooperation with the Committee on Law and Finance) what can be done to secure such regulation?

### **Billboards and Signs**

(7) Study the local billboard situation. What types, sizes, and placings of billboards are employed in Mason City? Secure photographs showing typical and extreme conditions.

(8) Is there any tendency to erect billboards near public parks, in residential districts, or along boulevards? Secure photographs of any such instances.

(9) Study the local situation as to business signs, overhead signs, electric signs, etc.



(10) Do projecting and overhead signs constitute a physical danger to pedestrians? Do they injure the appearance of business streets? Secure good photographs showing typical and extreme conditions.

#### Poles and Overhead Wires

- (11) Study the local situation.  
 (12) Would fewer poles be needed in streets (business especially) if they were put to combined uses?  
 (13) Are cables (overhead and underground) used as extensively in Mason City as in other similar cities?

#### Unhealthful and Unsightly Places

- (14) Indicate on a city map the location of any dump heaps, low places, etc. Show conditions by good photographs.  
 (15) Make recommendations as to the proper method of dealing with these nuisances.

#### Noise

- (16) Does Mason City have an 'unnecessary noise' nuisance?

#### Dust

- (17) Study districts of city suffering from dust nuisance. What can be done to remedy conditions?

## II. SUGGESTIVE OUTLINE FOR A HOUSING SURVEY

### Building Conditions

(a) *Types of houses* (construction type, size, number of stories, number of families provided for, number of rooms, bathrooms provided, etc.); (b) *condition of houses* (age, state of repair, cleanliness, etc.); (c) *light and air* (dark rooms, small windows, ventilation of sleeping rooms and toilets, areas of yards and courts, etc.); (d) *heating and plumbing* (type, condition, etc.); (e) *out-buildings* (type, use, condition, etc.); (f) *alley and rear houses* (prevalence, distribution, type, etc.); (g) *vacant houses* (location, number of rooms, repair, equipment, time vacant, reason vacant, rent asked, agent or owner, whether "for sale only" or "not in market"); (h) *new houses* (number, construction, type, distribution, etc.); and (i) *land subdivision* (relation of lot sizes and proportions to type of housing).

### Occupancy Conditions

(a) *Races* (number of each, distribution, national traits, living standards, etc.); (b) *employment* (classification, child labor, etc.);

(c) *income*; (d) *rents* (prevailing rates, uniformity, relation to property values, etc.); (e) *permanency* (residence in town, time in house); (f) *home ownership* (owner, tenant, tenant purchasing, local owner, out-of-town owner); and (g) *overcrowding* (number of families, persons per room, number of lodgers, etc.).

### Living Conditions

(a) *Water-supply* (quality, source, facilities, convenience, etc.); (b) *sewage disposal* (connected with sewer, type of toilets, toilets used jointly by several families, etc.); (c) *sanitary conditions* (drainage, cleanliness, disposal of wastes, keeping of fowls or animals, etc.); (d) *fire dangers* (houses, out-building, yards, etc.); (e) *cellar rooms* (condition, whether used as sleeping or living rooms); (f) *recreation* (size and condition of yards, other play spaces, etc.); (g) *streets* (type and condition); and (h) *nuisances* (nature, source, severity, etc.).

## III. INSTRUCTIONS FOR A STREET-TREE SURVEY

**Object.** The object of the survey is to obtain an accurate record of the existing street trees—their location, size, kind, and condition.

**Make-Up of Parties.** Each surveying party should include at least two members (preferably three), one to write down the measurements and to direct the work of the party.

**Equipment of Parties.** Each party should be provided with (1) a measuring tape (a 50-ft. pocket tape marked in feet and inches will prove satisfactory), (2) a supply of blank forms (Fig. 59), on which the measurements are to be recorded, (3) a clip-board to hold these sheets, (4) a pencil, and (5) a map of the district to be surveyed. A pocket tape is also handy for measuring tree trunks.

**Method of Work.** Use a separate record sheet for each one-block section of each street, even though there are no street trees in the block. Observe the following order of work in preparing each record sheet:

(a) Print the names of the three streets, as shown on the sample sheet. Check the street names by consulting the map.

(b) Indicate roughly the relative positions of all the street trees in the block on both sides of the street. Use a large dot to represent each tree.

(c) Starting at one end of the block, move from tree to tree along one side of the street, obtaining the measurements and the other information required. Then cover the other side in a like manner.



(d) Record the following information for *each tree*: (1) Distance between centers of trees or to the end of block (measure to the nearest foot); (2) Distance of the center of each tree from the edge of the sidewalk next to the private property (measure to the nearest  $\frac{1}{4}$  foot); (3) Circumference of the tree in even inches, taking this measurement by wrapping the tape about the trunk about three feet from the ground; (4) Record the species or kind of tree (be as accurate as your knowledge permits—if you are not certain what kind a certain tree is, indicate this by placing a question mark after the name); (5) Describe the condition of each tree as 'good,' 'fair,' or 'bad.' Consider the immediate future of the tree rather than its present. *Good* means that the tree is in a healthy, growing condition and that it shows no signs of becoming otherwise. *Fair* means that the tree is beginning to fail, but that it may be restored to a healthy, growing condition by cultivation, fertilization, pruning, filling cavities, etc. *Bad* means that the tree is too far gone for it to be possible or worth while to restore it to a healthy condition.

(e) In some convenient place on each sheet add an arrow indicating which direction is north.

(f) Carefully mark off each street section on the map as it is surveyed. A glance at the map will then indicate what work is done.

#### IV. LIST OF SURVEY MAPS PREPARED FOR MASON CITY

**Region About Mason City.** (Front cover.)

**Mason City as a Railroad Center.** (Fig. 3.) This sketch map shows the railroads, stations, and railroad connections within a radius of fifty miles from Mason City.

**Original Town Plat of Mason City.** (Fig. 5.) This map was traced from the original plat, now a county record.

**Platting Dates.** On this map (not reproduced) the platted areas throughout the city were tinted in contrasting colors so as to indicate the year or period in which the land was platted. On each plat was also shown the name of each sub-division and the exact date on which it was recorded.

**Surface Geology.** (Fig. 4.) The original from which the reproduction was prepared shows by distinguishing colors the areas covered by each of the various geological formations.

**Highways and Thoroughfares.** On this map (not reproduced) were indicated in color the various thoroughfare streets, as well as the street routings of the various through highways.

**Street Jogs and Endings.** (Fig. 19.) This map shows graphically many faulty conditions as to street arrangement.

**Street Widths.** (Fig. 14.) On the original survey map (not reproduced) the various widths of alleys and streets were distinguished by tinting the street areas with contrasting colors.

**Street Grades.** This map (not reproduced) indicated all street grades over 3 per cent by means of different colors applied to the street areas. The direction of slope in each case was indicated by a small arrow.

**Paved Streets.** (Fig. 16.) The original survey map (not reproduced) distinguished between the various kinds of pavements existing in Mason City (brick, asphalt, wood-block, plain-concrete, vibrolithic-concrete, and reinforced-concrete) by showing the street areas in colors, one for each type of surfacing.

**Pavement Widths.** The different widths of pavements were indicated on this map (not reproduced) by the use of contrasting colors.

**Railroad Property and Grade Crossings.** (Fig. 21.) The original survey map (not reproduced) shows the property of each railroad in a distinguishing color. Street-railway routes were indicated by lines of different colors. All stations, grade crossings, and grade separations were shown in color.

**Street-Car Lines and Time Zones.** (Fig. 24.) The original map was somewhat easier to follow than is the reproduction, because the different zones were tinted in contrasting colors.



**Public Buildings and Grounds.** (Fig. 53.) The original map distinguishes between the different properties by means of colors which, when reproduced in a half-tone, do not serve to identify the various buildings and areas.

**Parks and Cemeteries.** On this map (not reproduced) the location of each city park and cemetery was shown in color.

**Distribution of Dwellings.** (Fig. 12.) The approximate location of each dwelling was indicated by means of a black dot on a base map. This map serves to show, in a rough way, the distribution of Mason City's population.

**Public Schools and Residences.** (Fig. 36.) This map was prepared to show approximately the relation between school and population distribution.

**Industrial Property.** (Fig. 72.) The original survey map (not reproduced) differentiated between the holdings of each industrial company by showing their land holdings in different colors.

**Residences of Industrial Workers.** This map (not reproduced) shows the place of residence of each employee of the larger industries by means of small symbols in a different color for each industry.

**Property Development.** *Thirty-five maps* (not reproduced) traced from the maps of the Iowa Insurance Service Bureau. These maps show all street, alley, and property lines, as well as the size, location, height, type of construction, and use of all buildings. The data on these maps should prove exceedingly valuable in city-planning studies—particularly in zoning.

**Vacant Land.** This map (not reproduced) shows in black all areas representing vacant land.

**Land Values.** This exceedingly interesting and valuable map (not reproduced) was produced through the cooperation of several local realtors. Land values were estimated throughout the city on a front-foot basis, each value range being indicated by applying a distinguishing color to such areas as came within this range. Such a map usually shows zones roughly concentric about the business center, with long tongues of land extending out along the main thoroughfares. Its symmetry is affected by such obstacles as streams, rough topography, and railroads. It serves to indicate growth tendencies and to show up cheap and accessible land available for parks, playgrounds, etc.

**Disease Distribution.** On this map (not reproduced) the distribution of cases of small pox, scarlet fever, and diphtheria that occurred in Mason City between March 5, 1921, and December 31, 1922, were indicated by small symbols of different shapes.

**Water Mains and Area Served.** This map (not reproduced) shows all water mains, distinguishing the various sizes by lines of different color. The property areas served were tinted.

**Sewer System.** On this map (not reproduced) all sewer mains were shown by red lines on which the pipe sizes in inches were marked. The location of each manhole was indicated by means of a small circle.

**Area Served by Water and Sewers.** (Fig. 50.) This map was prepared by combining information from the maps showing water mains and sewer mains.

**Gas Mains and Area Served.** This map (not reproduced) shows all gas mains, distinguishing the various sizes by lines of different sorts and colors. The property areas served were tinted.

**Electric Distribution.** On this map (not reproduced) were shown in different colors the primary circuits and transformers for light and power, as well as the street-arc circuits and the location of the lamps.

**Telephone Cable System.** On this map (not reproduced) the various sizes of telephone cables making up the telephone distribution system were indicated by colored lines, a different color being used for each size of cable.



## V. SUMMARY OF CONCLUSIONS ON TRAFFIC CONTROL

National Conference on Street and Highway Safety  
1924

1. Traffic laws and regulations should be effective and reasonable, based on the lessons of experience. Rules governing the conduct of drivers and others on the highway should be uniform. The excellent work already done by associations and conferences of officials concerned toward standardization of such laws and regulations should be coordinated and completed.

2. In city streets, except one-way streets, and on rural highways whenever the traffic is heavy, the current of traffic should be on the righthand side of the roadway. Heavy and slow-moving vehicles should keep to the right where possible, and their operators should, by mirrors or otherwise, keep a good lookout to the rear so as not to obstruct traffic.

3. Regulation of speed of vehicles should be directed primarily at reckless driving and should be uniform throughout the country as far as practicable. It should be unlawful to operate a vehicle at a speed greater than is reasonable and proper, having regard for the traffic and the use of the highway, or so as to endanger the life, limb, or property of any person. Municipalities and other political subdivisions of the state should be empowered to fix speed-limit zones according to local conditions, but should be required to mark the boundaries of such zones plainly and in order to promote uniformity the speed limits should be subject to general control by state law. The state law should prohibit any municipality from establishing a speed limit lower than 15 miles per hour. In rural areas, instead of an absolute speed limit, it should be provided that when any vehicle exceeds 35 miles per hour that speed shall be prima facie unreasonable and it shall be incumbent upon the operator to prove affirmatively the reasonableness of such greater speed.

4. Vehicles before entering or crossing a properly designated "through-traffic" street or highway should be required to come to a full stop. At all other intersections any approaching vehicle should be required to grant the right-of-way to any vehicle approaching from its right at such speed as to reach the intersection at approximately the same time.

5. Except in wide city streets carrying two or more well-defined lines of traffic in the same direction, a vehicle should pass another moving in the same direction only on the lefthand side of the overtaken vehicle, and only after giving due warning of approach. Overtaking moving vehicles on sharp curves, approaching hillcrests, at in-

tersections, or at railroad crossings should be prohibited. An overtaken car should not increase its speed while being overtaken, and the operator of an overtaking car should exercise care not to crowd from the highway the car being overtaken. Street cars stopped to discharge or receive passengers should not be overtaken except where a safety zone or loading platform is provided.

6. Parking should not be permitted where it will endanger or seriously impede moving traffic, or prevent reasonable access to the sidewalk for loading or unloading of vehicles. This will prohibit the parking or stopping of cars on any part of the traveled portion of a rural highway and also involves the prohibition or vigorous restriction of parking at congested points in cities. To make such prohibition feasible, rural highways should be provided with wide shoulders or other parking spaces at intervals of not more than 300 feet, and in business districts of cities it may become necessary by some means to provide ample parking space entirely off the street.

7. Safety requires that operators of motor vehicles indicate by hand signals their intent to do anything which may affect the movements of others in the vicinity. Uniformity and simplicity in such signals are both highly important. A single cautionary signal, made by extending the arm well outside the vehicle, as a warning that the operator is about to turn, slow down, stop or back, is recommended as preferable to a code which attempts to show more exactly what the operator intends to do.

8. Local speed limits and other special regulations should be conspicuously announced by standard signs at appropriate places on the highways.

9. Special regulations of the use of particular streets, including the placing of automatic signs and signals, the designation of arterial streets and highways, and restrictions of class of traffic, direction of traffic, parking privileges and the hours and periods of such restrictions, should be based upon competent traffic counts and analyses and established in accordance with some general plan of traffic movement founded upon the design of the street system in each city.

10. In congested centers and where large volumes of vehicle movement takes place between centers considerably removed, it is suggested that an effort be made to segregate street cars, motor trucks, and passenger automobiles on separate thoroughfares.

11. Vehicles should not be permitted to exceed a speed of 15 miles per hour when approaching within 100 feet of any railroad crossing. It should be made a violation of law for a motorist to disobey a clearly visible and positive signal to stop at a grade crossing.

12. Pedestrians and motorists should bear a considerate attitude each to the other. Along rural highways wherever there are





## THE COLLEGE

The Iowa State College of Agriculture and Mechanic Arts conducts work in five major lines:

AGRICULTURE

ENGINEERING

HOME ECONOMICS

INDUSTRIAL SCIENCE

VETERINARY MEDICINE

The Graduate College conducts advanced research and gives instruction in all these five lines.

Four-year, five-year, and six-year collegiate courses are offered in different divisions of the College. Non-collegiate courses are offered in agriculture, home economics, and trades and industries. Summer Sessions include graduate, collegiate and non-collegiate work. Short courses are offered in the winter.

Extension courses are conducted at various points throughout the state.

Research work is conducted in the Agricultural and Engineering Experiment Stations and in the Veterinary Research Laboratory.

Special announcements of the different branches of the work are supplied, free of charge, on application.

Address, The Registrar,

IOWA STATE COLLEGE,

Ames, Iowa.