Minor & Major

PLANNING THESIS

MASTER OF ARCHITECTURE (C.P.)

University of Manitoba
I95I

F. H. Deeks, B.Arch.

THE UNIVERSITY OF MANITOBA LIBRARY

A PLANNERS NOTEBOOK

A Development Plan in the form of a basic collection of useful data from the survey, its contents both social and physical, methods of gathering the survey material, as well as methods of presenting the survey material, right through to the actual planning of a smaller Canadian community.

f DEEKS 4

what is PLANNING

1 The object of town and country planning is to ensure that the best use is made of the land.

2 The work of the planning staff of a local government is first to survey both the resources and needs of an area, and second, on the basis of that survey to prepare plans to secure the best use of that land.

3 The survey will cover the physical features of the area, water supply, soil fertility, minerals, and so forth; the growth of population, the industries that are expanding and those that are declining; housing, open spaces, public buildings; the development projects of the transport authorities, of local industrialists, of utilities, and of provincial and national government agencies. The greatest possible importance is attached to this survey, which will present a reliable and detailed analysis of the community from every aspect and an estimate of its future growth and needs. Without this survey no plan can be of any real value.

4 On the basis of this information and after full consultation with other local, provincial and national government agencies affected, the local government's planning staff will prepare their original plan—first in broad outline over a wide area, and later, when development is likely to take place in any part of that area, in greater detail. The *original* plan will show the principal communications and the broad allocation of land among the main uses, such as agriculture, new towns to be established, existing communities to be enlarged and special areas to be preserved because of their scenic beauty. The *detailed* development plans will show the actual layout of industrial and commercial areas and of new neighbourhood units (with their own shopping centres, schools and open spaces) and the detailed proposals for reconstructing and redeveloping areas of over-crowding and congestion. Each plan will be explained to the public before it is finally adopted by the local government and submitted to the Provincial Department for approving in its final form.

5 At every stage the planning officer will have to advise his municipal Council in the light of the plan or provisional plan whether any proposed change of land use should be permitted either in its original form or with modifications.

6 The new conception of planning demands the services of men and women with various qualifications. It will need the co-operative effort of economists, geographers, sociologists and members of other professions to secure that all the facts about the area are known, including the characteristics and wishes of the people. There will also be a growing need for qualified architects, engineers or surveyors, to design and redesign our towns in order to make them more beautiful and commodious places in which to live and work. Here again it is a matter of team work, and the town planner must co-operate with his professional colleagues, and with those in charge of government services such as education, housing and public health.

From Town and Country Planning; careers for men and women *issued by the British Ministry of Labour. Adapted by the Community Planning Association of Canada with permission.* *Crown copyright reserved.*

EXAMPLE OF PLANNING, MAKING, AND USING THE SURVEY FOR A COMMUNITY .

Purpose of Community Surveys:

1. Attract Industry
2. Plan for post war period.

If area has civic or trade organization,
e.g. Chamber of Commerce
Merchants' Association
Planning Commission
with a backlog of experience in survey work, clarification of purpose may be relatively simple. If Committee for Economic Development has been organized, it's function of stimulating company by company post-war preparation will be of great assistance, also locally organized businessmen.

These efforts supply initial inspiration and facilitate the agreement of purposes. Overall planning and direction, however, may require the continued activity of a more generally represented group and should include, in addition to participants from individual companies and local businessmen, financial institutions, newspapers, university or college bureaus of business research, the engineering and planning department of local government, local labor organization, service clubs, and so on.

Such a commision or committee should work very closely with the financial sponsors in the definition of purposes. preliminary meetings might well form a community conference with wider than committee attendance at which frank discussion will tend not only to determine validity of purposes proposed but to enlist broad interest and support in subsequent data gathering stage.

Practical Purposes of Community Surveys.

1. To make a complete survey of a city or region as a basis for analyses to improve it industrially, commercially and socially; and to assemble the data in convenient form so that special reports can be prepared for the use of local business, outside industries and government agencies.

2. To obtain such facts concerning local resources, facilities and general characteristics as would be of signifigance to specific industries considered suitable in the light of data from the survey.

3. To investigate the opportunities for increasing employment, or stabilizing current employment, by making an intensive study of the status of the local labor force, current and anticipated trends in employment within the major types

of local industry and commercial enterprise, the kinds of industry that should be encouraged to remain, expand, or to locate in the city or region.

4. To make a survey of transportation facilities, trends in local taxation, regulation, evidence of cooperative attitudes of local government, the existence of adequate capital and financing facilities, and important social aspects such as should be of significance to a specific industry known to be comparing communities equally advantageous with respect to raw materials or other physical resources.

5. To investigate industrial plant facilities, bridges, schools, and other public buildings, recreation facilities, zoning needs, transportation within the city, housing conditions, construction costs, and relative needs and opportunities for expansion in local building and construction activities.

6. To make an intensive survey of consumer purchasing power, distribution of family income, and buying habits for business and other economic uses.

Scope of Community Surveys:

The scope of community surveys depends upon:
- -- quality of personnel available
- ---nature and extent of financial cooperation
- -- expectations possible from local sources of information, to supplement published data.
- -- limitations as to time of completion.
- -- facilities for assembling and tabulating material.
- -- extent of provisions for keeping important information up to date..

Competent Investigators:

Should have trained outsider to adi local staff and act as consultant.

Some Fundamentals from Point of View of Industry.

There are factore which a manufacturer considers essential in the search for a location. Each industry varies.

As a preliminary step in analyzing the individual problem, the professional investigator requests from his client factual information covering a fairly standard set of essential points. These bear, principally, upon the nature and extent of manufacturing operations and present facilities which affect his production and distribution requirements. Schedules examined reveal that, in addition to information of management, costs of various operations, and other details as applied to his present place

of production, a client company seeking a new location can expect to be called on to submit specific data on a number of subjects.

Schedule of information from manufacturer:

1. Trends in the companies' growth and factors contributing to growth at the present or previous locations.
2. Details regarding specifications of products manufactured.
3. Markets and advertising, extent of consumption and trend of consumption, by localities, and conditions affecting demand and channels of distribution and sale.
4. Competition within industry and from related or substitute products.
5. Raw materials and supplies, relative importance of different kinds of materials required, source of supply of each material, prices and terms.
6. Locality, relative importance of different location factors such as nearness to raw materials, nearness to markets for the product, power cost, labor availability by types of requirements, labor conditions, rates, and related factors, importance of climate site requirements, relative importance to the company of railroad facilities, water facilities, room for expansion, electric power and gas, sewers, housing facilities and other factors.
7. Local regulations and taxes, relative importance of banking facilities, provision for recreation, educational facilities, churches, and so on.

A community desiring to attract industry might well cover in it's contemplated survey factors showing what the community could offer in the line of company requirements.

General region decided upon - survey staff uses information to eliminate some of the communities. Sometimes other cities are made subnects of indirect investigations. Through confidential communication with present or former industries in the cities under tentative consideration, through consulting financial institutions, and through unobtrusive visiting within the neighborhood of possible interest, the list of potentisl sites may finally be brought down to relatively few.

Most times individual industries are primarily concerned with obtaining advantages in the way of materials, labor, power, markets, and transportation. "Advantages" are considered in terms of relative costs, adequacy, and permanency. Order of importance varies with type of industry, result of innovations such as new labor laws, alterations in freight rate bases, and the establishment of new industries.

Meeting the Needs of the Individual City.

Opportunity to attract industry depends less on size of city than on other factors.

In theory, smaller city has less ground to cover in making a simpler survey. A big city might enable a fairly complete coverage without great expense and without the need to make a choice between several subjects of research just as well as the small city, because the community habitually keeps informed about itself through regularly bringing essential facts up to date and occasionally making intensive studies or special studies on particular factors.

The need to recognize possibilities and to reveal the particular circumstances of the individual city becomes particularly significant if it is discovered that there is little opportunity to attract new manufacturing industries. This is not justification for assuming that a study of local situation would not reveal opportunities for the attraction of some other economic activity or, for that matter, for the general improvement of the community as a place to live.

It may be suspected that greater distributive activities warranted by the local facilities and that wholesaling, retailing, or the service trades may prove to be the most fruitful fields for development. A study, then, might be devoted to an analysis of data on family income, total purchasing power of the community and it's trading area, buying preferences that tend to hold trade in the community or direct it to other cities, and related date. Under such circumstances, particularly in a small community, an intensive study of one or a few subjects might be more useful than a complete survey.

Outline of Method of Survey.

The method of survey is largely determined by the "job analysis" and the tentative subject outline for the individual project. The basic outline in Section II should be recognized as material adaptable for many different survey purposes and must not be accepted as compilation to be blindly followed without change. Obviously, it is more comprehensive than any survey which is likely to be made of a single area at any one time. This general guide attempts to meet the combined requirements of local or regional surveys by either communities or business firms. The details are intended to serve as "leads" in stimulating thought toward the most profitable investagation that is suggested by the local situation, rather than to serve as an all-inclusive pattern, e.g. -- raw materials -- a close following of the most intensive treatment given in any basic outline would hardly do justice to the peculiarities of the local resources if those resources are of special importance to particular industries. Therefore, a subject of that kind might properly occupy less space in the reference outline than is given to some subjects of less importance.

Upon completing in initial tentative draft of an outline incorporating subjects that seem desirable, the surveyor's next step is to determine the extent to which the major subjects and sub-topics in his outline are covered by available data from authoratative sources. When the desired information with respect to any part of the survey isfound already to exist that part can be checked off as not requiring further attention at this point in procedure. The "checking off" procedure will finally leave on this tentative outline a list of subjects that muse either be eliminated from the proposed survey or marked for further development through field work.

After rechecking with the material listed in section II and with other available data to which the user may have access, there might be an advantage in re-examining all items in the basic outline in order to discover possible further additions or deletions. Through thorough study and careful revision of this preliminary outline, the investigator will undoubtedly reduce available detours in research, effect economies in time and money, and increase the value of results. Details under major headings are necessarily subject to change as familiarity with applicable material develops. On the other hand, an outline that looks exceedingly simple, through leaving too much to the imagination and to trial and error as the survey progresses, may prove an expensive guide.

As a rule, sponsors of a local survey anticipate the need for field work to obtain a considerable part of the specific facts required, and the survey committee or board of sponsors come to some agreement on the outline before any field work is undertaken. The method of obtaining desired data will naturally be left to the technitians on the job and usually there is more than one approach to the desired facts.

e.g. Public inquiry for some purposes is at the present time largely concerned with employment, consumer buying power, and trends in income in relation to trends in living costs. Since there is a dearth of basic data from which to compute reasonably satisfactory income estimates, local income is sometimes roughly measured by applying population figures to per capita income as computed from estimates of national income, monthly rents, or by a combination of projections from income tax return statistics and from data in existing sample studies on family income distribution.

Factual data for any single community would necessarily come from a local survey. Where this is feasible, it may be approached from the angle of total "income paid out" in the community in the form of wages, salaries, and so forth, through all employment giving activities, or there may be a direct survey of consumer income and buying habits among a representative sampling of the local family population. The detailed outline under "Consumer Purchasing Power" (Section IX) and other major subjects is offered for the possible encouragement of some uniformity among such local surveys as may be undertaken.

Likewise an industrial survey may be confined to the collection of facts bearing on one type of industry or may touch upon all major factors that tend to influence the industrial development of the city from a long-time viewpoint. These illustrations apply to all major subjects suggested in the basic outline.

Existing Aids.

Local authorities are first sources to be explored in looking for existing information. If city has planning board, or other office specifically devoted to city planning, that office can usually be counted on as a valuable source of needed maps and other materials.

Local utility companies, railroads, newspapers, colleges, manufacturing plants, banks, local attorneys, commercial houses, and the main offices of local chain stores are among other potential sources of pertinent information that may already have been gathered and assembled at considerable expense. It is assumed that the local Chamber of Commerce is taking a major part in such survey work as is undertaken for the advancement of business and industry, and that the Dept. of Trade and Commerce is known to the community as a source of valuable assistance. In many communities, much has been accomplished by local committees for Economic Development in their work to help individual companies meet the problem of the post-war period. The local survey effort will be found to be of definite practical value, for many purposes, if it can do no more than bring together readily available material from local sources and supplement it with data obtainable at relatively small cost from Provincial and Federal Government Agencies.

Importance of Showing Trends.

The survey director will find it advisable, before submitting to the project sponsors the outline which he proposes to follow, to become personally familiar with certain difficulties that may be encountered in using basic data for any one year. For example, data on a city's manufactures in any designated year may have little significance unless accompanied by statistics indicating trends in manufactures over a period of years.

Although manufacturing statistics applying to analysis of trends are collected and published by the Government at regular intervals, the constant effort to improve these statistics, changes in the value of the dollar, and other considerations tend to lessen their comparability. It is well, therefore, to decide whether exact comparability is an essential factor and, if so, what adjustments need be made. These decisions will be aided by a careful examination of successive reports on the same subject or by inquiry to the sources of the published data.

Graphical Illustration of the Report.

Significant maps, charts, graphs, and photographs are desirable features in reports intended for distribution to industrial and commercial contacts. Their nature and the extent of use will naturally depend upon such considerations as the major purposes of the report, the skill with which highlights can be pictorially demonstrated, and the budget allowed for the survey project. Illustrations were considered of two general types : (1) those prepared as work charts for office use by local authorities concerned with studying present facts and possibilities for progress, and (2) those intended to interest and inform the types of contacts for whose attention the report is designed.

Reports covering the industrial, commercial, or general economic aspects of the city may advantageously include some maps on important factors such as : the strategic location of the featured city in relation to population, freight service, and proximity to raw materials; wholesale and retail trading areas, industrial, commercial, and residential zones, land values in industrial areas; transportation routes, with volume of traffic; and such items are suggested by local situation.

Space limitations permit reference to only a few of the many types of charts and graphs known to have attracted favorable attention. These include the representation of industrial growth; skilled and unskilled labor employed over a designated period; airport development; bank deposits; municipal finances, miles of streets, building permits issued; ratio of sales per family in the city to those per family in Canada; number of retail outlets per 1,000 families; major income sources; housing characteristics; and other outstanding facts. In the chapter "Methods of Presenting the Material" there are illustrations of the different methods of presentation.

Retracing the Procedure.

The many steps and diverse operations necessary in even relatively small-scale surveys make it extremely easy to forget important details or to inadvertently fail to give due attention to each significant stage of the survey task. It is well worth while, therefore, to retrace the procedure to show :

1. A specific statement of the purpose of the survey, understood and agreed to by all cooperators on the project.

2. Provisions for funds to cover the cost of the survey and follow-up work in getting the results used and revised as needed.

3. Competent personnel obtained for directing the survey and accomplishing the research work.

4. A "job analysis" prepared by the personell to insure understanding as to objective and the limitations of the survey project.

A preliminary draft of outline prepared by the survey staff for the approval of the sponsors.

Investigation to find out how much of the desired information has already been assembled by various local agencies, and the bringing together of locally available material applying to the survey as outlined.

Bringing together of published data available from other sources.

Accomplishments of a field survey to obtain additional data, if any, regarded as essential to the project (the field work kept to the minimum of requirements).

Careful checking to insure that the assembled material represents the facts.

Systematic filing of the data under a workable classification of subjects, as each item is interpreted in the light of the significance; a report of progress presented to sponsors.

Assembly in loose leaf form, if that form has been agreed upon, of principal facts uncovered in the survey that relate significantly to the stated purpose.

What Comes After the Survey?

With the completion of the survey, the facts resulting from it presumably meet the general objective, through giving the community material it needs in order to understand its's strong and weak points and to work for general improvement. To the extent that one or all of the following uses entered into the specific purpose of the project, the physical results are shaped to:

Uncover such opportunities as may exist for expanding the communities' established industry and trade.

Provide facts that, in the right way and at the righttime should be brought to the attention of other industries that have a potential interest in what the community has to offer, and the ability to contribute to the communities improvement from all the various factors that should be considered.

Improve the social as well as the economic environment of the community to make it a more attractive place in which to live.

This publication properly ends with the completion of the survey. In contrast, the communities' program of sustained effort for self-improvement extends far beyond the completed project. Points brought out in the preceding comments tend to emphasize that a definite schedule of use for the survey should be part of the preliminary stage of preparing it. The survey should be completed in a form that enables it to be kept currently up to date and should, with all the basic working materials, be

deposited with a local permanent organization sich as the Chamber of Commerce. The maintenance of the survey findings in such an accessible place will facilitate their constant use as a live reference and their frequent renovation through periodic surveys in special departments of interest and will, furthermore, serve to make unlikely any duplication of effort in subsequent studies.

CH ECK LIST OF STAGES OF PROCEDURE IN MAKING LOCAL OR REGIONAL SURVEYS.

1. Prepare a specific statement of the purpose of the survey.
2. Provide for funds to cover the cost of the survey and follow-up work.
3. Obtain competent personnel for directing and completing the work.
4. Prepare a job analysis to insure an understanding of the objective and limitations of the survey project.
5. Prepare a preliminary draft of outline for the approval of the sponsors.
6. Investigate to discover how much of the desired information has already been assembled by other agencies.
7. Bring together published data available from other sources.
8. Make a field survey if any additional information is needed.
9. Check carefully to insure that assembled material is correct and as complete as possible or necessary.
10. File information systematically under a workable classification of subjects.
11. Present periodic progress reports to sponsors.
12. Prepare final report, preferably in loose-leaf form.
13. Maintain files in some permanent organization, keeping information up to date for current use by organizations and individuals interested.

CHECK LIST OF THE MAJOR TYPES OF LOCAL AND REGIONAL INFORMATION.

This list of topics, outlined in detail on the following pages, includes more subjects that can be used in an individual survey. Depending upon the purpose of the survey, it's planned scope, and the size and the make-up of the area to be studied, a variety of topical selections can be made by the director of the study. Each outline must conform to the needs of the individual survey.

1. Historical sketch.
2. Location.
3. Population.
4. Materials required by industry.
5. Power.
6. Industrial development.
7. Labor situation.
8. Employment and unemployment.
9. Consumer purchasing power.
10. Living costs, standards, and conditions.
11. Construction and real estate.
12. Wholesale trade.
13. Retail trade.
14. Buying habits of local consumers.
15. Service establishments, hotels, and places of amusement.
16. Transportation facilities.
17. Public warehousing.
18. Banking and finance, insurance.
19. Professional services (Physicians, dentists, lawyers.)
20. Newspapers, radio stations.
21. Expositions, fairs, and conventions.
22. Industrial and commercial associations.
23. Universities and other educational institutions.
24. Federal, Provincial, or municipal government establishments.
25. Summarization of pertinent provincial and local laws, and regulations.
26. Municipal administration and related data.
27. Civic, social, and related facilities and activities.
28. Important physical facilities and special features not elsewhere described.
29. General statistical recapitulation.

ECTION II: A BASIC OUTLINE WITH PRIMARY SOURCES OF INFORMATION FOR LOCAL AND REGIONAL SURVEYS.

utlining of Project Preliminary to a Fact-Finding Survey.

he drafting of a carefully considered outline should precede
ny work in the actual collection of data. Such a preliminary
raft requires skillful handling to insure reasonable compre-
ensiveness combined with sufficient flexibility for necessary
djustment as the survey develops. In preparing material of this
ind it is helpfuh to have for reference a basic "guide Outline",
uch as is here presented, incorporating many points for consider-
tion in a scientific approach to any industrial or commercial
urvey.

Since different purposes involve different groupings of
elected subjects and variations in degree of detail, an outline
repared for general use should not be expected to fit all re-
uirements of individual surveys. On the contrary, the presump-
tion is that no one survey will include everything given by way
of suggestion, or will fail to include such additional factors
as are appropriate to the individual situation.

The basic outline shown on succeeding pages, together with
the listings, is so arranged that the competent user can conven-
iently select for intensive development those subjects which are
of immediate concern to his region or community, or can disregard
detailed suggestions beyond those designated by capital letters
and first numerals and shape his survey accordingly. In other
words, the intention is clearly to indicate a choice between an
intensive study of any subject of outstanding importance in the
community and a more general study touching upon many subjects
of potential interest for widely different purposes. Consideration
has also been given to many possible compromises between a mere
"desk study" of published material, for the purpose perhaps of
supplementing a previous "complete Invantory", and a comprehensive
field survey.

It will be noted that this outline, which embraces des-
irable information from many points of view, is based on the
assumption that the local investigators will be unbiased in their
fact-finding efforts and will make every effort to know, with
respect to each phase of study, the unfavorable as well as the
favorable factors. A community, seeking self-improvement and
economic advancement through new industries and the success of
established business cannot afford to be unaware of it's exist-
ing weaknesses.

BASIC OUTLINE INCLUDING PRIMARY SOURCES.

HISTORICAL SKETCH.

Origin :

1. Date.
2. Circumstances of first settlement :
   a.- Nativity and other characteristics of settlers.
   b.- Difficulties and accomplishments.
3. Local Authorities including oldest inhabitants, encyclopedias and historical references in local libraries, newspapers and city, county, Provincial and Federal Government records.

Early development and factors influencing growth.

1. Topographic and climatic influences.
2. Trade routes and transportation.
   a.- Rivers and harbors.
   b.- Canals.
   c.- Overland routes.
   d.- Railroads.
3. Native resources and accessibility of -
   a.- Supplies for consumption.
   b.- Materials facilitating employment.
4. Power, initial sources -
   a.- Water
   b.- Fuel.
5. First market outlets.
6. Predominating human influences.
7. Other important features.

Type of characteristic activity developed (industrial, commercial, educational, etc.) and analysis of reasons for that type of development

I. LOCATION

Geographic :

Physical features pertinent to present-day Industry and trade.

1.- Topographic influences (mountains, rivers, lakes, soils, etc.)
2.- Climatic characteristics.
   a. Temperature, mean average per month, etc.
   b. Rainfall, amount and seasonal tendencies
   c. Other (relative humidity, sunshine, wind, fog storms, etc.)

3. Scenic attractions (influencing tourist trade, etc.)
Local Authorities (personal observers, managers of tourist offices, of city depts. etc.)

Location in relation to -

1.- Important Resources.
a. Raw Material (see IV)
1. Agricultural (crop productions, dairy products, etc.)
2. Mineral (kind, records of production,Etc.)
3. Forest (available supply, commercial uses, etc.)
4. Other.

b. Fuel resources (production requirements- coal oil,gas,etc.)
c. Water supply (in quantity and quality required in processing by main types of industries - source, reliability,etc.)

2.- Labor (see VII)
Sources of information in the city or region.

3.- Markets (consider facts under Transportation XVI)
a. Industrial (local,regional, national,relate to VI)
b. Wholesale (relate to XII)
c. Retail (relate to XIII)
d. Export (principal commodities, exports, etc.)

D. Other (such other factors as have special significance)

III. POPULATION.

A. Number of Persons.

1.- Total in Metropolitan area (as close an estimate as can be made for the corporate city and such extensions into the surrounding area as covered by the survey.
See (XIII B)
a. Male
b. Female
c. Number classified as to age, sex, and race.

2.- Total in corporat e area.

B. Percentage of total for Canada.
The city,region,or other area (suchcomparisons, if any, as may apply to the purpose of the survey.)

C. Number of Families.

1.- Total in Metropolitan Area.
2.- Total in corporate area.

Growth (steady-rapid) and status (permanent-temporary)

1.- Total increase or decrease in population 1920-1940.
2.- Actual or estimated change in total population since 1940

Composition.

1.- Race
2.- Native white.
3.- Predominating activity of foreign born.

Literacy.

Other (such additional characteristics as may be important to the local situation).

MATERIALS.

Materials required by industry (availability and cost factors, all important facts peculiar to the individual situation with such comparisons with other districts as apply)

a. Raw materials (see II)
b. Products of other industries (kinds readily obtainable, semimanufactured goods, equipment, supplies, etc.)

A and B - local sources of information.

POWER.

Sources

1.- Purchased power from public utilities.
2.- Produced by individual enterprises for own use.
a.- Water
b.- Steam
c.- Internal combustion
d.- Electricity

Rates and Regulations.

1.- At time of survey.
2.- Changes within recent years.
3.- Changes provided for or under consideration.
4.- Comparison with other areas.

Local Municipal administrative officials records at sources of supply, oldest industries, such Provincial Regional authorities as may be concerned.

Changes in local facilities for serving industry and commerce (all important changes on which information is available).

Present favorable and unfavorable features of local facilities from the point of view of the:

1.- Community
2. Supplier
3.- Individual industries.

Adequacy of supply to meet industrial growth.

Other facts of importance with respect to the local situation (provisions insuring reliability of aupply etc.)

INDUSTRIAL DEVELOPMENT.

General production statistics and related factors.

1.- Number of establishments.
2.- Number of wage earners.
3.- Amount of wages.
4.- Cost of materials, fuel and purchased electrical energy.
5.- Value of products.
6.- Value added by manufacture.
7.- Trends in :
   a. total value of products
   b. total number of wage earners
   c. total amount of wages
8.- Percentage of total population in Canada, in the region, province (or such comparisons with other areas as may be significant)
9.- Principal markets supplied (relate to XVI and II); percentage of materials bought from local sources and percentage of manufactures sold to local agencies if the local situation seems to warrant a direct inquiry to elicit factual data and the information is essential to consideration of the individual problem.

10.-Waste Products (utilization, disposal facilities)

Individual Industries.

1.- Production statistics of each important industry now in operation (present volume of production in terms of number of units, value of products, number of wage earners, etc. and trends within recent years; the national trend with respect to each industry - apparently overdeveloped and underdeveloped).
2.- Number and kind of new industries locating in the area within the past ten years, or other period of interest (reasons for locating).
3.- Number and kind closed down or leaving the area to operate elsewhere within the period considered

under B2 (factual information concerning reasons insofar as possible)
a. Seasonally
b. Temporarily (exclusive of normal seasonal closing.)
c. Permanently.

A-C Local Authorities and executives in industries moved to other places.

4.- Important industries that have continued in operation over a long period of years (permanence ascribed to what factors).
Local Authorities.

Other (such additional facts characterizing the local situation as may be essential to a comprehensive analysis of the present industrial status, the industrial advantages or disadvantages as compared with comparable areas, recent trends, and future possibilities.
Local Authorities.

II. LABOR SITUATION.

Adequacy of Labor Supply.

1.- Skilled, semiskilled or unskilled.
2.- Male, female.
3.- Resident, transient, predominating nationality.
4.- Situation in surrounding territory (neighboring reservoir of labor from which to supplement local supply if necessary; special conditions giving rise to this supply; type of labor available, such as unskilled farmhands, semiskilled or skilled labor resulting from neighborhood shift in industry, etc.)
5.- Related factors such as labor turnover, efficiency, training facilities.
(1-5)

Wage Scale as compared with scale in :
1.- Each of recent years.
2.- Similar areas.

Laws and Local Regulations.

1.- Wages and hours.
2.- Labor conditions.
3.- Changes within recent years.

Labor Unions.

1.- Organizations and membership.
2.- Attitude towards each other.
(1-2) Local union officials.

. Relations betwee n Capital and Labor (record as to strikes, etc. - results)

. Special local efforts to maintain satisfactory conditions (working, living).
(E-F) Local industrial and labor leaders, chambers of commerce and other local industrial associations.

. Other Facts (the uninterrupted absence of labor troubles or the harmonious settlement of a well-known controversy; recent improvements in methods of payment,etc.)
Local Authorities.

III. EMPLOY MENT AND UNEMPLOYMENT (closest possible estimates where specific data cannot be made available.)

. Number gainfully employed, (exclusive of employees paid from relief funds).

1.- Total number:
a.- Race (white,negro,other)
b.- Nativity (native white,foreign white)
c.- Sex
d.- Age (under 16years, between 16 and 21)
2.- Gainful workers per family (average)
3.- Comparisons with other areas, or with Canada as a whole (the most helpful comparisons depend upon the size , type and location of the area and the purpose of the survey).

. Principal Sources of Employment (industrial plants, commercial establishments, etc.) in the order of their importance in number employed.

. Recent trends toward increased or decreased employment with respect to each principal source of employment (as concluded from such data for the current year and preceding years as are available).

. Unemployed Employables (unemployed persons able to work)
1.
1.- Number of emergency workers paid from relief funds) with suchbreak-down as is possible by race, nativity, sex, age, and duration of employment.
2.- Number totally unemployed
3.- Number partially employed.
4.- Percentage formerly employed in local ~~industryx~~ -
a.- industry
b.- wholesale trade
c.- retail trade
d.- service trades
5.- Percentage never employed on a full-time basis in any local occupation.
(1-5) Private and governmental social agencies and local authorities.

Other (such other facts as may be peculiar to the local unemployment situation)

X CONSUMER PURCHASING POWER (estimated income in dollars of individuals and families, considered in relation to cost of living. See text "Outline and Methods of Survey"; for suggestions regarding direct and indirect angles of approach in obtaining data.

Wages, salaries, commissions, etc. and business income from occupation, with a breakdown, if locally feasible, by the following sources of income:

1.- Agriculture. Such income as residents in the survey area may derive from the surrounding farm area.
2.- Mining. Such income as may be derived from coal and other mining activities by residents of the survey area.
3.- Electric light, power and gas.
4.- Manufacturing.
5.- Construction.
6.- Transportation.
7.- Communication.
8.- Trade.
9.- Finance - Local authorities.
10.- Government - Local government authorities in the community or area surveyed.
11.- Service.
12.- Miscellaneous (all other sources of wages, salaries, commissions, etc. and business income.
Local Authorities, Chamber of Commerce, etc.

B. Interest from Savings Accounts in:

1.- Banks - Financial statements of banks in local newspapers.
2.- Postal Savings.
3.- Other depositors.
(2-3) Local Authorities (data usually not available except through field survey).

C. Net Income from Investments:

1.- Owned real estate.
2.- Stocks and bonds.
3.- Miscellaneous (royalties, shares in cooperative establishments, etc.)

D. Other (all other known sources of local income such as direct relief, etc.)
C-D Data on National income by sources, such as agriculture, manufacture, income from investments etc.)

Estimated per capita or per family income. Local estimates.

Distribution of family income by size of income (relative number of families having income below $1,000 to $2,000 etc.)

Trends in income in recent years (general increase or decrease; increase or decrease in relation to changes in local cost of living; with respect to income from various industrial catagories; for various types of income, such as wages and salaries, investments, interest on savings, etc.; and in distribution of income by size of income).

Comparisons with other communities or with Canada as a whole (general conclusions to the extent of such supporting data as may be obtainable)

Peaks and Levels (seasons or months during which local income is normally highest; normally lowest).

Payroll methods (general analysis concerning the timing of "pay days" for full time wage earners and salaried employees in factories and other establishments).

Other - (other outstanding characteristics)
I-K - Local Authorities.

Living costs, standards and conditions and related indixes of consumer use of buying power.

Living costs (price trends on consumer goods).

1.- General average (as compared with other places)
2.- Commodity prices for food, clothing etc. (average per year).
3.- Trends (comparisons with previous years sufficient to reveal general trends in local living costs.)
4.- Other data on livingcosts (indicative of specific local advantages or limitations - fresh fruits and vegetables at reasonable cost, etc.) I- 4

Provincial and local cost of living studies . Include studies made by universities, Chambers of Commerce, and trade and economic groups.
Local Authorities (Intensive study usually involves a local field survey.)

Family Expenditures.

1.- Kinds of goods and services used by the consumers of the various income classes.
2.- Average expenditure for major purposes (estimated annual expenditure) by income classes.
3.- Comparisons(such comparisons with other years and other areas as are possible).
4.- Other data of special local significance.

H ousing. (considered together with XI).

1.- Number of occupied dwellings.
   a. Percentage occupied by owners.
   b. Distribution of home owners by lower, middle and upper income levels (estimates)
   c. Average value of owner-occupied dwellings; recent trends.
   d. Age of dwelling units.

2.- Rent (average for year per dwelling unit) as compared with other places; estimates, if possible,as to average rents paid by families of the various income classes, and as to trends in averare yearly rent in relation to changes in family income.

3.- Light, heat, water and telephone service.
   a. Rates charged for home use; comparisons with other places.
   b. Recent local changes in rates, in service.
   c. Other (additional points of special interest)

4.- Modern improvements in homes, situation with respect to:
   a. General adequacy of plumbing and heating facilities.
   b. number of installed airconditioning units.
   c. Other.

5.- Other data (such other data as may be essential to a true picture of local yousing situation).
   Local sources of information.

Related indixes of consumer use of buying power.

1.- Number of telephones.
2.- Number of regiestered automobiles.
3.- Number of domestic electric meters.
4.- Number of families having radios.
5.- Circulation of newspapers.
6.- Circulation of magazines.
7.- Trends (D 1 to 6 inclusive)
8.- Other indixes (pertinant data are also included under "Banking", "Retail Trade", "Construction" and "Real Estate".)
9.- Comparisons (1to B8) with other cities or regions: and with previous years (sufficient to indicate trends in local increase or decrease, also trends in terms of relationship between increased or decreased population). (7-9)
   Local sources of information for special data applying to the local situation.

Other data pertinent to the local situation.
   Local Authorities.

I CONSTRUCTION AND REAL ESTATE.

Construction (by kinds of business, census classification; general contractors for building, highway and heavy construction, special trade contractors, such as carpentering, concreting, electrical, excavating, heating and plumbing, roofing and sheet metal, etc.)

1.- Number of contracting establishments.
2.- Value of work performed (dollar volume for year)
3 .- Number of active proprietors and firm members.
4.- Number of employees (average for year)
5.- Pay rolls (dollar volume).
6.- Cost of materials, brick, cement, lumber, steel, and all other materials (actual or estimated dollar volume for year)
7.- Comparison of local construction costs with other localities where comparable information is available.

B. Building Permits (total number per year and dollar value)

1.- Residences:
   a. One, two, and three family units (by cost groups)
   b. Apartments.
   c. H otels.
2.- Office buildings, retail stores, etc.
3.- Industrial structures (factory bldgs,, etc.)
4.- School buildings, churches, theatres, municipal bldgs., etc.
5.- Other (comparisons with other cities, etc.)

C. Demolition amd Conversion permits (with such breakdown as is important).

D. Number of vacant buildings by areas (classified as to residences of various types; office bldgs., manufatturing plants, etc.) Data on general condition of vacant bldgs. sufficient to indicate relationship of construction needs.

E. Building regulations, local, Provincial and Dominion, affecting local building, activity, zoning, etc.) Local building inspector, zoning board, etc. (Local study in most cities would require special field survey.

F. Trends in local construction (as indicated by such statistics for preceding years as are available).
Local authorities.

G. Number of real estate figures, average number of employees for the year, actual or estimated total wages and salaries paid.
Local Authorities.

Real Estate Sales, mortgages, etc. (for last year of record; comparisons with preceding years sufficient to indicate general trends).

1.- Number of sales and dollar value of property sold.
2.- Number of mortgages recorded and total amount of mortgage debts.
3.- Number of foreclosures.(
(1-3) Local Recorder's office.

Real Estate taxes (details to supplement general data under "Municipal Administration" XXVII).

Rent (considered under "Housing" X C).

Real Estate prices (general trend during recent years).

Supply of improved and unimproved properties for home building , industrial and commercial expansion; available plant site close to railroad, river crossing and other such special features as should prove of interest to industries of the types for which the area is suited. (J-L) Local realestate board or association, Chamber of Commerce and other local authorities.

Other (such additional facts or construction and real estate as are of special significance to the community).

II WHOESALE TRADE.

Number of Establishments.

1.- Total (all establishments operated by"Wholesalers" as defined in the latest census of business.
2.- By types of operation.
a. Full-service and limited function.
b. Manufacturer's sales offices and travellers
c. Bulk tank stations, independents andchains engaged primarily in the storing and wholesale distribution of petroleum products.)
d. Agents and brokers ("Middlemen" such as auction companies, merchandise brokers, commission merchants, etc.)
e. Assemblers (cream stations, cooperative marketing associations, grain elevators and other buyers and sellers of farm products on a whoesale basis).
3.- By kinds of business (grocery,drug, etc.)
a. Independent.
b. Chain

Employment.

1.- Total number of employees (average for year)
2.- Number of employees in each kind of business (average for year)
3.- Seasonal tendencies.

Payrolls (total for year).
1.- Part time.
2.- Full time.

Sales.
1- Total (dollar volume for year).
2- By kinds of business (dollar volume for year).
3- Seasonal tendencies in sales volume.

Local Regulations.
Provincial and local authorities.

Number and kind of new establishments between the period covered by the last census of Business and that covered by the preceding census, or during some other recent period for which comparable records may be available.

Business failures within the period referred to under "F".

Other facts (special characteristics affecting wholesale distribution through local establishments, such as recent trends toward cooperative wholesaling or other developments of importance.

(G-H) Court records, Chambers of Commerce, etc.

Importance of the area as a wholesale trading centre(if the area is not itself an important wholesale centre, relate this subject to significant facts under "Location" with respect to sholesale markets. Item II C 3b).

XIII RETAIL TRADE AND METROPOLITAN SHOPPING AREA.

A. Retail Trade.

1.- Number of Establishments.
a. Total (all types and kinds of retail outlets.
1. Independent.
2. Chain (National,sectional and local)
3. Other

2.- Employment.
a. Total number of employees (average per year.)
b. Number of employees in each kind of business
c. Seasonal tendencies.

3.- Payrolls (total for year).
a. Part time.
b. Full time.

4.- Sales.
a. Total dollar volume for year.
b. By kinds of business (dollar volume for year.)
c. Per capita sales

d. Comparisons with comparable data.
1. In preceding censuses.
2. For other localities.
(1 and 2) Analysis by the individual making the local survey.

e. Seasonal tendencies in sales volume.
Monthly business review and local retailers.

5.- Approximate capitalization or size of leading stores (if particularly important local feature)
Local Retail Association or Chamber of Commerce.
Local Retailers.

6.- Store operating expenses (such comparisons with other localities as may be possible)

7.- Uniformity of store policies (with respect to credit, returned goods, advertising, frequence of deliveries, etc.)

8.- Attitude of principal stores toward each other (generally cooperative or otherwise, as indicated by membership in local organizations, such as Chamber of Commerce, retail credit associations, or other credit agency, etc.)
(7-8) Local Merchants associations, store executives, and proprietors.

9.- Local Regulations.
Municipal and Provincial authorities.

10.- Store locations in general with respect to shopping areas (downtown, suburban, etc.) in relation to trends in population within the area and convenience to customers.
Local survey for detailed study (in some cities chain store organizations or other authorities have made special investigations.)

11.- Number and kind of new establishments between the period covered by the last census of Business and that covered by the preceding census, or during some other recent period for which comparable records may beb available.

12.- Number of business failures within the period referred to under item XIII A,11.
(11-12) Dun and Bradstreet Inc.
Court records and local authorities.

13.- Other facts (such as principal wholesale sources of locally retailed foods, clothing, and furniture, if the local situation seems to warrant a direct inquiry on this point.)
Local Retailers.

Metropolitan Shopping Area.

1.- Consumer buying "radius" in square miles as indicated by such measures as density of population in suburban areas (census method), extent of the city's newspaper distribution, retail store deliveries and use of the city's internal transportation facilities.
2.- Extent of suburban customer patronage of downtown stores.
3.- Patronage of local stores by consumers from other cities.
4.- Other important considerations.

Local newspapers and Chambers of Commerce. Other local authorities. (The local situation may suggest a special field study.)

IV BUYING HABITS OF LOCAL CONSUMERS.

Proportion of cash purchases to total purchases; comparisons with other communities; apparant trends with respect to installment buying.

Apparent general preferences as to shopping hours of the day, days of the week, time of the month. (Refer to IX J)

Buying in other places by local consumers.

1.- Estimated percentage of total purchases bought elsewhere.
2.- Classes of goods most frequently bought elsewhere.
3.- Names of cities from which goods are frequently purchased.
4.- Recent trends in connection with extent of outside buying.

Other important characteristics (applying to an analysis of why trade is lost to or gained from competing communities.)

Other local studies - Adequate information on the local situation may involve a special field study.

V Service establishments, hotels, places of amusement.

Service establishments, by kind of service (census classification)

1.- Number of establishments (recognized places of business.)
2.- Number of employees (average for year).
3.- Payrolls (dollar volume for year)
    a. Full time.
    b. Part time.
4.- Receipts for the year (in cities covered by Census reports, at least).
5.- Seasonal tendencies of importance.
6.- General trends within recent years (in number of employees and in other respects suggested by the local situation.)

Hotels, Tourist Courts and Tourist Camps.

1.- Number, date of establishment, size and other general description.
2.-5. (as suggested for A2 to A5 inclusive)
6.- Rates:
a. Current rates.
b. Principal trends.
c. Comparisons with rates in comparable places.
7.- Recent general trends in volume of business.
8.- Number of first and second-class establishments closed within recent years.
9.- Other facts of significance (construction facilities, see XXI A, home residence of hotel guests, etc.)

Places of Amusement (amusement parks, athletic fields, skating rinks, bathing beaches, billiard and pool clo- parlors, dance halls, theatres, etc.)
1.- Description of principal places.
2-5. As suggested for A2 to A5 inclusive.
6.- Recent general trends in volume of business.
7.- Other facts of importance to the community.
Propietors of local places of amusement.

VI TRANSPORTATION FACILITIES.

Railway.
1.- Number and names of railways serving the city.
2.- Passenger traffic.
a. Number of trams daily (convenience as to time schedule)
b. Outgoing
i Average number passengers (per day, week, month)
ii Important destinations (points to which largest number of tickets are sold).
iii Seasonal tendencies.

Local Stationmaster.
Local passenger agents of the various railroads.

3.- Freight Traffic:
a. Total number of trains daily (convenience as to time schedule).
b. Number of through trains daily (direct routes to market).
c. Number of freight yards.
i - Y ard-track miles.
ii - Industry track miles (sidings adjoining plants)
d. Volume of freight handled (in carloads or tons)
i - Comparison between estimated volume of incoming and outgoing freight.)
ii - Other facts bearing on economical accessibility to markets (freight comparisons- preferential and non preferential rates to principal points, etc.)

e. Number of stations for each railway.
f. Extent of pick-up and delivery freight service.

4.- Freight Warehouses.
a. Number
b. Capacity
c. Ownership (railway owned, etc.)

5.- Additional data indicating special or unusual facilities.
6.- Important developments or changes within recent years.
7.- General trends in volume of business (passenger and freight).
8.- Other facts significant of the local situation (travel time to important points, etc.)

(5-8) Local Authorities (lack of available information on the local situation may indicate the need of a special study.)

Water.

1.- Number and names of lines.
2.- Markets served and frequency service (by ocean, lake, river and canal).
a. Domestic
i Name of products
ii Number of sailings to each port (during week, month or other specified period)
b. Foreign (name of markets, number of sailings to each port).
i Direct to foreign markets
a. Under Canadian flag.
b. Under foreign flag.
ii Indirect to foreign markets (by transshipment at other ports, domestic or foreign).

3.- Volume of Trade.
a.- Outgoing
i Domestic
ii Foreign
b.- Incoming
i Domestic
ii Foreign
c. - Terminal facilities and service.
i Number of piers, number of berths, dry docks, etc.
ii Warehouse facilities
a. Number of bonded warehouses
b. Special data (such as capacity, ownership, etc.)
iii Lighterage facilities.
iv Port development not elsewhere specified (data such as depth of water, bunker coal supply, anchorage facilities, and other local developments of importance to shipping companies)

v Customs
vi Foreign Consul service.

4.- Other data of importance.
5.- Important developments or changes within recent years.
6.- General trends in water transportation (volume of business, etc.)

(1-6) Officer in charge of local station, if any, of the Army or Navy corps of Engineers.
Local officials of shipping lines.

Air Service

1.- Ownership or control.

2.- Localities served.
a. Direct
b. Travel time to important points.

3.- Frequency of flights
a. Mail, express and passenger.
b. Approximate volume of traffic
i Outgoing
ii Incoming

Local Authorities, such as information office at airport, air-line ticket office in city or railway station and airport managers.

4.- Airport (city's accessibility to) and other special facilities such as lighting, radio communication, weather reporting, public conveniences, etc.

5.- Important developments or changes within recent years.

6.- General trends (in volume of business, etc.)

7.- Other important facts.

(4-7) Local Authorities.

Highway Transportation.

1.- Principal highways.
a. Primary (main interstate routes)
b. Secondary and county.
c. Condition of road surfaces
d. Extent of road improvement in recent years
e. Other features of importance.

Local Sources such as filling station operators,etc.

2.- Motorbus and motortruck service (intercity and interprovincial, etc.)
a. Number and names of companies.
i Number of units of operation (total or by each company)number of routes covered,
ii mileage, etc.)
ii Cities served by each line (points on routes of particular importance to the are being surveyed)
iii Number of daily or weekly trips.
iv Approximate volume of freight handled(tons)
a. Outgoing
b. Incoming
v Average number of passengers carried (estimatedper week or month)
a. Outgoing
b. Incoming
b. Special terminal facilities.
c. Recent trends (volume of passenger and freight business to and from the city, etc.

(A-C) Public Service or public utility commission in the Province involved.
Records and officials of operating companies.

3.- Important developments or changes (equipment service) within recent years.

4.- Other facts of importance.
(3-4) Local Authorities.

Electric Car Service (interurban).

1.- Number of lines (passenger, freight or both)
a. Cities serviced by each line.
b. Number of daily or weekly trips.
2.- Average volume of business (per day, week or month)
a. Passenger
b. Freight
3.- Recent trends
4.- Other data of local importance.

(1-4) Public service or public utility commission of the particular Province involved.

Pipe-line Facilities (for transporting of oil, gas, etc. to or from the area).

1.- Number and names of lines.
2.- Cities served by each line (points of particular importance to the area that is being surveyed.
a. Fathering lines
b. Trunk
3.- Capacity
4.- Products carried (fuel oil, gas, etc.)
5.- Volume of shipments (to or from the city)
6.- Development within recent years.
Operating company records.
Public service or public utility commission of the Province.

COMPARISONS (if pertinent to local problems) between types of transportation facilities as to:
1- Rates (passenger and freight)
2.- Convenience
3.- Trends toward increased or decreased business within recent years.
(1-3) Comparisons from other figures under XVI

City's Internal Transportation Facilities.

1.- Streetcar service.
a. Ownership (public or private)
b. Average daily number of passengers.
c. Number of miles of track or route.
d. Routes, from the point of view of best service to community.
e. Rates (or fares).
f. Important developments or changes within recent years in-
i Service
ii Rates
iii Types of equipment(change from two-man to one-man type of car; change from surface traffic to subway or elevated,etc.)
iv Average daily number of passengers (general trend toward increase or decrease)
g. City regulations
h. Other (special features of local situation)

2.- Bus lines (same points as for streetcar service).
3.- Cooperative delivery service (or other special merchandise delivery facilities for serving area.
4.- Other facilities of importance (taxicab service,etc.)
(1-4) Operating company records.

Other (all other significant facts concerning transportation facilities in relation to present and potential requirements).
Local Authorities.

VII PUBLIC WAREHOUSING.

Statistics by kind of warehousing establishments (household goods, general merchandise, farm products, cold storage, etc.)

1.- Number of warehouses.
2.- Storage rates for principal commodities.
3.- Number of employees (average for year)
4.- Pay Rolls (dollar volume)
5.- Revenue (estimated total for the year,all warehousing establishments).
6.- Total local revenue and employment as compared with totals for the region in which the community is located or with other regions.

7.- Recent changes in number of warehouse establishments, firms going out of business, or new warehouses established.
8.- Adequacy or inadequacy of present public warehousing facilities.
(1-8) Municipal and provincial managers or local warehouses and Chamber of Commerce.

Seasonal tendencies in warehousing (month or months with highest dollar volume of business, lowest dollar volume, largest number of employees, smallest number of employees, etc.)

General trends in volume of business within recent years.

Other facts of Importance.
(B-D) Managers of local warehouses.

III BANKING, FINANCE AND INSURANCE.

Banks.

1.- Names of principal banks, dates of establishment, and description of each as to kind, national, mutual savings, industrial (including Morris Plan). Joint stock, land and foreign banking agencies;
2.- also classified as to "unit" and "branch bank".
2.- Total number of banks.
3.- Employment and Pay Rolls (for year)
   a. Average number of executives, (including president, vice president, cashier, assistant cashiers, assistant treasurers and chairmen of boards of directors if actively engaged on a salary basis.)
   b. Average number of other employees.
   c. Total salaries, and wages, bonuses and allnother payments to officers and employees (dollar volume).
4.- Rank of the largest bank in relation to other banks in the district, province, etc. (on other helpful comparisons).
5.- Bond deposits (number of accounts and dollar volume per year) on:d
   a. Demand
   b. Time
6.- Total loans and discounts (dollar volume per year) total assets.
7.- Interest rates.
(1-7) Officers of local banks and financial statements of banks in local newspapers.

Financial Institutions other than Banks (security brokers and dealers, Savings and Loan Association, Building and Loan Associations, installment finance companies, personal finance companies, mortgage and farm mortgage companies and miscellaneous, such as commodity exchange and bank clearing house, etc.)

1.- Description of important institutions.
2.- Employment and volume of business for the year of all such institutions.
(1-2) Officers of local financial institutions.

Insurance and Brokerage Offices (identifiable as business establishments.)
1 and 2 - as suggested for B1 and B2.
Local officers and agents of insurance companies.

General

1.- Total loans through all locally established financial institutions (dollar volume for the year); or sufficient data to indicate the trend toward increase or decrease.
   a. Loans to business firms or other business organizations.
   b. Loans to individuals and families.
2.- Comparisons, if possible, to show the general trend in interest rates, employment, volume of business and business failures, in local banking, finance and insurance institutions.
3.- Other (such additional information as my be significantin considering the local situation, particularly with respect to abilities and inclinations of banks to extend credit to industrial and commercial enterprises. Trends in total dollar volume of savings accounts.)

(1-3) Local Authorities (the local situation may suggest the need for a special field survey.)

[PROFESSIONAL SERVICE (physicians, dentists, lawyers,etc.)

Number engaged in professional work (other than trading) by-
1.- Kind of profession.
2.- Sex.

Revenues (for year) estimated or known;income from professional work.

Employment and pay rolls (for year).
1.- Number of employees (office assistants, etc.)
2.- Salaries and wages (dollar volume).

Comparisons with other years of record, sufficient to indicate trends in average fees charged and trends in the relation between available service and local requirements in each field.

Other important data.
(A-E) Telephone and city directories and local professional men.

XX NEWSPAPERS AND RADIO STATIONS.

A. Newspapers.

1.- Names of papers.
   a. Dailies (classified as to morning, evening, other and as to Liberal, Conservative, etc.
   b. Weeklies.

2.- Revenues from:
   a. Subscriptions
   b. Newsstand sales
   c. Advertising

3.- Employment and Pay Rolls (for year)
   a. Number of executives, contributors (average)
   b. Number of other employees (average)
   c. Salaries and wages (dollar volume)

4.- Largest circulation area (square miles covered by routes).

5.- Important changes or trends within recent years.
   a. Amount of increase or decrease in largest circulation area.
   b. Number and kind of papers added or discontinued.
   c. In equipment
   d. Advertising rates and volume.
   e. Activities and influence (cooperation on local surveys, charity drives, etc.)

6.- Other significant features (such dates of establishment as are of interest, etc.)
(1-6) Advertising rate cards of local newspapers and editors, officers and files of local papers.

B. Radio Stations (essential details as to names of stations, ownership and employment, revenues and wattage; and significant trends as to importance as an advertising medium, etc. any additional details suggested for newspapers that apply to the community's radio facilities)
Managers of local stations.

XXI EXPOSITIONS, FAIRS AND CONVENTIONS.

A. Local Facilities (consider convenience and adequacy of assembly, places and equipment; all other local features that may appreciably influence patronage. See XV B9.

B. Nature of assemblies (annual, occasional or permanent expositions, fairs, trade shows, etc. of importance to the community considered from the angle of employment, revenue, type and extent of outside patronage, advantages to business and industry, etc.)

Other (allocation of responsibility for attracting conventions; extent of general cooperation within the community, etc.) See also XVI A2 and XVI H.

II INDUSTRIAL AND COMMERCIAL ASSOCIATIONS (Chambers of Commerce commodity and technical associations, grain exchange, etc.)

Names of all associations and institutes having within an area an established place of business, classified as to national, regional, provincial or local, and by nature of service.

1.- Local membership (generally representative of the local businesses or industry served, or limited in representation).

2.- Number of employed (average for year).

3.- Pay rolls (dollar volume for year.)

Effectiveness of organizations concerned with local conditions)

1.- As to aid to established local business and industry.

2.- In advancing harmonious and cooperative relations with neighboring communities.

3.- As factual authorities concerning the kinds of new industries and business establishments desirable from the point of view of successful development of each industry and of the community as a whole.

4.- In promoting the location of suitable industries and commercial establishments and in discouraging potential industries under conditions of limited opportunity.

(A-B) Local industrial and commercial executives.

III UNIVERSITIES AND OTHER INSTITUTIONS (Provincial, municipal, etc. having appreciable enrollments from other communities. Other schools are covered under XXVII).

Universities, colleges, academies, and all other educational institutions drawing a transient population.

1.- Description of each important institution, date of establishment, special features attracting student population, etc.

2.- Enrollment.

a. Total for year.

i From local population

ii From other communities

iii By age groups (sufficient to indicate predominating types of consumers brought in through these institutions)

b. Total for month of highest enrollment.

c. Total for month of lowest enrollment.

3.- Revenue (dollar volume for year).

a. Tuition fees.

b. Other (classified as to source)

4.- Recent trends in enrollment and revenue.

THE UNIVERSITY OF MANITOBA LIBRARY

5.- Economic importance of these educational institutions.
   a. Employment and pay rolls (for year).
      i Number of teachers and administratos (average)
      ii Number of other employees by types of employment (average)
      iii Pay rolls (total dollar volume)
   b. Estimated expenditures within the metropolitan area (exclusive of expenditures going to the institutions) of the enrolled individuals indrawn from the communities.

6.- Other significant data (capacity in relation to trends in enrollment, etc.)

Registrars and other offices of the local universities and institutions.

Federal, Provincial or Municipal Hospitals, Asylums etc. (all other than educational institutions largely subject to enrollments from outside area.

1. and 2.- (same type of data suggested under A1 and A2.

3.- Employment and payrolls (per year)
   a. Number of administrative officials and professionals (average).
   b. Number of other employees, by types of employment (average).
   c. Pay rolls (total dollar volume)

4.- Revenue (for year) classified sources.

5.- Estimated total expenditures within the metropolitan area for supplies, services and materials necessary for operation (dollar volume per year)

6.- Other significant data (capacity in relation to trends in requirements.

(1-6) Officers of local, federal, provincial and municipal institutions.

IV A federal, provincial or municipal government establishment for a provincial capitol or a municipal seat, such special establishments and facilities as contribute important activities to this type of city.)

Description of each important activity and establishment; significant details as to extent of employment and pay rolls for the year, extent of permanent and transient population brought to the area through these activities; consumer characteristics of thos population; architectural features of buildings, etc.

Recent changes or trends of importance.

(A-B) Local officials of Federal, Provincial or Municipal Governments.

Other (all other types of establishments and special features that tend to contribute to the communities' employment, purchasing power, and consumption) description of each, and significant details as suggested under XXIV. Local Authorities.

V SUMMARIZATION OF PRINCIPAL PROVINCIAL AND LOCAL LAWS AND REGULATIONS(affecting industry and commerce and consumer purchasing power).

Taxation.

1.- Enumeration of state and local laws and regulations providing for the levying of fees; franchisertaxes, businessprivilege taxes, and other direct taxes, and against commercial and industrial corporations, etc. located in the area, also taxesand special assessments on real and personal business property.
2.- Enumeration of federal and local laws and regulations providing for the levying of direct taxes against individuals and families residing inthe area, also taxes on real and personal property (other than business property).
3.- Provincial and local excises and other indirect taxes.
4.- Recent trends in tax legislation.
5.- Tax laws setting up obstacles to inter-regional trade.

Incorporation and registration of individuals using a firm name (requirements and cost.)

Labor laws and regulations with respect to/-

1.- H ours and wages.
2.- Unions
3.- Other labor factors.
4.- Factory laws.
5.- Recent trends in labor organization.

Banking and Credit.

Insurance (restrictions, rates, etc.)

Zoning.

Traffic (intra-city motortruck regulations, etc.)
(D-G) Provincial Codes and statutes, municipal ordinances.

Local laws regulating competition; other important regulations.

All important recent trends in legislation not covered above under individual subjects or included under item XXVII.

Recent Court decisions of particular importance to local situation.

History of local taxation with respect to efforts to avoid excessive taxing of industry as compared with taxes in other communities within the region (such as efforts toward self-sustaining improvements where feasible, consultation with large tax-paying industries preliminary to planning improvements involving heavier taxes, etc.) .
(H-K) Local Authorities.

XVI MUNICIPAL ADMINISTRATION AND RELATED DATA.

Form of city government (mayor-council, commissions, council manager, town meeting; comparison with form in comparative cities.

1.- Internal organization and personnel.
   a. Departments, boards, commissions (organization chart or other enumeration of data showing the government set-up; departments; number and purposes of all boards and commissions and how members are selected; what municipal officials are elected by the people; what officials are appointed by the mayor or city manager.)
   b. Number of local government employees (total for year; estimated number of part-time employees) classified as to administrative officials and others.
   c. Salaries and wages paid from city funds (total for year).
   d. Trends in pay rolls; personnel lay-offs and salary cuts, etc.

2.- Recent changes of importance in municipal administration, such as changes in administrative organization; personnel administration; financial planning; municipal budgeting and accounting; public purchasing policies; municipal powers- recent legislative enactments limiting or increasing municipal powers; city planning and zoning provisions; ordinances relating to retail trade; provisions relating to playgrounds and recreation, and public welfare; police administration; public works, schools and education; public libraries; judicial administration, etc.)
(1-2)

Financial statistics.

1.- Revenue receipts for the year, classified as to source (general property taxes; special property and other special taxes; poll taxes; license taxes; special assessment; fines, forfeits and escheats, grants in aid; donations; pension assessments; highway privileges; rents and interest; earnings of general departments; earnings of publi-service enterprises, etc.
   a. Total
   b. Per capita.

2.- Payments for operation for the year (including salaries and wages of personnel), classified as to object of payment (such as general government; protection to person and property; conservation of health, sanitation; highways, charities, hospitals and corrective institutions; education; recreation, miscellaneous).
   a. Total
   b. Per capita.

3.- Total gross debt (at year-end accounting - classified as to character of obligations, such as funded or fixed, special assessment bonds and certificates and revenue notes); "net indebtedness" or such other classification of debt obligations as will adequately describe the city governments' financial situation.

4.- Difference between total revenue receipts and total payments for operation in terms of excess or deficit (for the latest year of record).

5.- Trends in municipal debt; comparison with other cities.

6.- Financing relief and recovery:
   a. Methods used.
   b. Trends in number receiving relief from public funds (comparisons for recent years of record)

7.- Comparisons with other cities.

8.- Recent economies effected in local government.

Taxation (by kinds of taxes - real estate, poll, income, license, etc.)

1.- Current rates, also comparisons with previous years sufficient to indicate trends; comparisons with comparable areas.
2.- Total assessed value of all taxable real estate.
3.- Total delinquent taxes for the year (by kind of taxes); total accumulated delinquent taxes.
4.- Other facts of importance.

(B-C) Local Municipal Authorities.

Utilities owned and operated (data as to kind and importance of each activity).

Number of registered voters (comparisons with humber registered during preceding years of record).

Other facts of significance.

(D-F) Local Authorities.

II CIVIC, SOCIAL AND RELATED FACILITIES AND ACTIVITIES.

Clubs, lodges, social service agencies, etc. - general data as to/-

1.- Principal organizations.
2.- Nature and importance of influence in the community.
3.- Clubhouses and other facilities.
Local Sources.

Churches (Number, classified by denominations of membership).

Schools (exclusive of universities and other institutions under XXIII).

1.- Number classified as to type (grade,high school, public, private, parochial, etc.)
2.- Recent trends in enrollment.
3.- Adequacy of buildings and other facilities.
4.- Recent trends in public school development (general situation, salary scale of teaching force in public schools; such comparisons with other cities as may be helpful).
5.- Other facts indicative of educational development.

Library Facilities (number and kind - public, private, special; adequacy).

Theatres, motion picture houses, etc.

Playgrounds and Parks (description of existing facilities as to location, size, accessibility, recent improvements, adequacy or inadequacy).

1.- Playlots for children of pre-school age.
2.- Neighborhood playgrounds for children up to 14 years.
3.- nDistrict playfields, for active play for persons over 14 years.
4.- Athletic fields for organized sports.
5.- Small neighborhood parks, for passive recreation.
6.- Large parks for passive recreation.
7.- Reservations (large parks left in natural state.)

Other recreational facilities, golf courses, fishing and hunting facilities, etc.

Special Facilities (central garage, community market,etc.)

Relief Facilities

1.- Community Chest or other local provisions.
2.- Recent trend in local relief situation.

H ealth and Safety Facilities and Conditions.

1.- H ospitalization and medical care.
   a. Description of hospital facilities (other than provincial, municipal, etc. under XXIII B).
   b. Provision for free clinics, etc.
   c. Recent trends in rates to patients, developments in service and facilities.

2.- Vital Statistics (birth and death rate for year; facts sufficient to indicate trends over a period of years; comparisons with other areas).

3.- Water for domestic use (source, adequacy of supply and quality; recent trends in rate scale to consumers.)

4.- Sewage and garbage disposal.

5.- Fire protection (adequacy, details as to water pressure, placement of hydrants, etc.)

6.- Police protection (adequacy, number of men,etc.)

7.- Traffic and parking regulations (recent trends towards increase or decrease in traffic accidents) Essential details not included under XXVI

8.- Sanitary promotion (measures taken to safeguard the public from unsanitary conditions in public eating places, beauty parlors, barber shops; requirements as to care in the wholesaling and retailing of perishable goods, etc.)

Other important civic and social features.

Recent civic and social changes or trends of outstanding importance.

(A-L) Local Authorities including Chambers of Commerce, telephone directory, officials of the public school system, city health officials, etc.

III Important physical facilities and special features not elsewhere described (number miles or blocks of pavement, lighted streets, etc.; boulevards, water front, bridges etc.
Local Authorities.

X General statistical recapitulation - a survey of the survey, listing in convenient form for general reference the highlights covered in detail under the various individual subjects. The nature of the special statistics to be included in this recapitulation would depend upon the type of questions most frequently asked, with respect to the area, by local residents and the general public. (This suggestion does not pertain to a published report. A currently maintained reference list or file of this type, as well as the preparation of published reports for specific purposes is referred to in preceding text pages of the example touching brieflyupon "Planning, Making and Using the Survey" for a community.

COMMUNITY SURVEY

COMMUNITY PLANNING ASSOCIATION OF CANADA

DATE_____

_____ PROVINCE_____

TION_____

PAL INDUSTRY_____

SUPPLY_____ SEWAGE_____

IC POWER_____

L TOPOGRAPHY_____

ED REDEVELOPMENT OF BUSINESS DISTRICT_____

_____

_____

_____

D REDEVELOPMENT OF RESIDENTIAL DISTRICT_____

_____

_____

_____

D DEVELOPMENT OF NEW RESIDENTIAL DISTRICT_____

_____

_____

_____

MENT OF INDUSTRIAL AREA_____

_____

_____

_____

MENT OF PARKS, PLAYGROUNDS, ETC._____

_____

_____

_____

) SERVICES IMPROVEMENTS - SEWERS, ROADS, ETC.

VICED BY THE TOWN

TER

CES

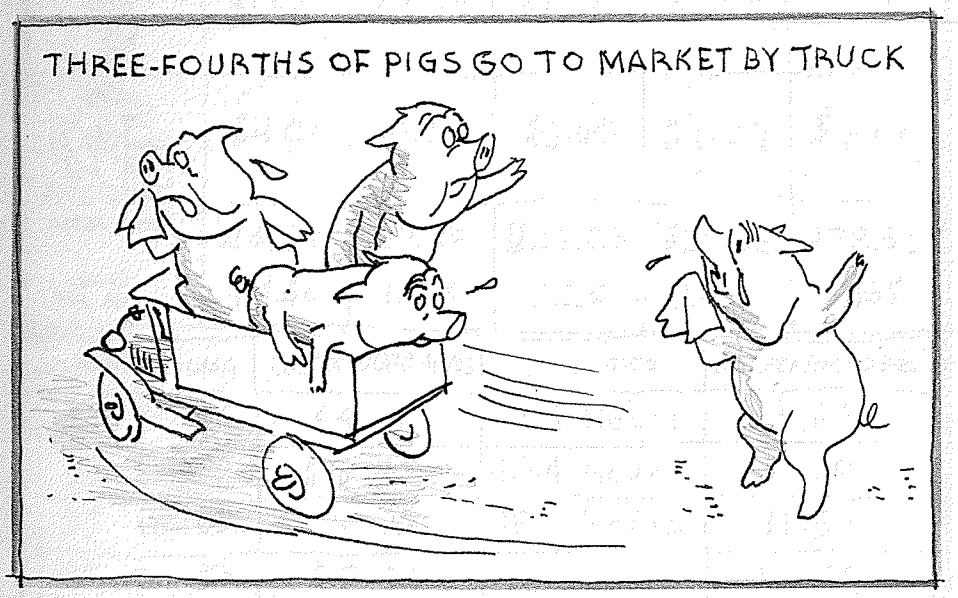
REMARKS

GRAPHIC NARRATIVE

Synonyms for graphic narrative are: ideographic drawings, pictograms, figurative symbols, pictographic charts, and hieroglyphs. Graphic narrative may involve the keeping of records, quality of materials, time, or quantities.

CHARACTERISTICS OF GRAPHIC NARRATIVE CHARTS

1. A picture is more universally understood than a word description.
2. Graphic narrative is adaptable for poster use and has a great deal of popular appeal.
3. There are few rules for, or restrictions on, the use of graphic narratives.
4. Quantitative data may be shown or suggested in graphic narrative form. The picture may stand alone or may be accompanied by comments of explanation.



TABULATION

Attractiveness can be a characteristic of statistical tables. Adherence to certian simple suggestions will improve their appearance. Designing is an integral part of every table and should be carefully planned. The actual form which any table takes depends upon the data to be presented.

MILES PER HOUR + D.U.'S	25 MILES PER HOUR (1D.U.)	35 MILES PER HOUR (2D.U.)	45 MILES PER HOUR (3D.U.)	55 MILES PER HOUR (5D.U.)	65 MILES PER HOUR (7D.U.)
 OIL	1/2 QT. .13¢	1 QT. .25¢	1 3/4 QT's .43¢	3 QT's .75¢	4 1/2 QT's $1.13
 GASOLINE	50 GALS. $8.75	55 GALS. $9.63	60 GALS $10.50	69 GALS. $12.08	80 GALS. $14.00
 TIRES	$1.50	$3.00	$4.50	$7.50	$10.50
 MAINTENANCE	$4.00	$5.00	$6.60	$10.00	$13.00
TOTAL COST	$14.38	$17.88	$22.03	$30.33	$38.63
COST PER MILE	1.44¢	1.79¢	2.2¢	3.03¢	3.86¢

Speed Increase	Cost per 1000 Miles	Time Saved	Cost per Hour Saved
35 to 45	$4.15	6.4 Hours	$.65
35 to 55	$12.45	10.4 Hours	$1.20
35 to 65	$20.75	18.2 Hours	$1.57
45 To 55	$8.30	4.0 Hours	$2.08
45 to 65	$16.60	6.8 Hours	$2.44
55 to 65	$8.30	2.8 Hours	$2.96

Information

Bermuda

EXPRESS SERVICE
355 McGill Street
MONTREAL, QUEBEC

OPERATIONS HEADQUARTERS
P.O. Box 2973 - Stevenson Field
WINNIPEG, MANITOBA

GROUND TRANSPORTATION—Trans-Canada Air Lines does not operate any ground conveyances. TCA neither assumes nor is under any liability of any nature with respect to ground transportation service or the acts or omissions of the independent limousine operators. Limousines are dispatched at scheduled times from city pick-up points designated in Table shown on page seven. DEPARTURES WILL NOT BE DELAYED TO ACCOMMODATE LATE PASSENGERS.

INFANTS—Passengers are requested to carry ample feeding for duration of flight, as TCA does not prepare special formulae.

INSURANCE—Air travel insurance is available at all Ticket Offices at the same rates applying to other forms of transportation for domestic or global travel.

LIABILITIES—Trans-Canada Air Lines assumes no responsibility other than specified in its Tariffs, published from time to time and filed pursuant to law.

LIQUOR—Any passenger considered to be under the influence of liquor will be refused passage, and any passenger considered to be so affected en route will be deplaned.

LOST ARTICLES—Inquiries regarding lost articles should be made to the Director of Passenger Service, TCA, P.O. Box 2973, Stevenson Field, Winnipeg, Manitoba, where all found articles are deposited, or contact any Station Manager, Purser or Stewardess.

MEAL SERVICE—Complimentary meals are provided aloft at established meal periods.

PASSAGE CANCELLATION — By the Passenger — UNWANTED DOMESTIC RESERVATIONS MUST BE CANCELLED AT LEAST THREE HOURS PRIOR TO FLIGHT DEPARTURE. UNWANTED TRANS-OCEAN RESERVATIONS MUST BE CANCELLED AS FAR IN ADVANCE AS POSSIBLE.

By the Company—The Company reserves the right to refuse or cancel bookings before passage or en route whenever such action is deemed advisable or necessary

PASSENGER SERVICE—Stewardesses are at your service and in addition, Pursers are in attendance on trans-ocean flights. Stewardesses are provided with a well equipped medical kit, and they are completely competent in its use.

REFUNDS—Application for ticket refunds may be made to the issuing agent or any TCA office.

RESERVATIONS—RESERVATIONS WILL NOT BE HELD UNLESS TICKETS ARE PURCHASED OR VALIDATED PRIOR TO THE TIME LIMITS SPECIFIED BY THE COMPANY WHEN RESERVATIONS ARE CONFIRMED. AT THE TIME OF REQUESTING RESERVATIONS PASSENGERS SHOULD ADVISE OF ANY INFANTS TO BE CARRIED.

SCHEDULES ARE SUBJECT TO CHANGE WITHOUT NOTICE—ALL FLIGHTS ARE SCHEDULED TO OPERATE DAILY, UNLESS OTHERWISE SPECIFIED.

ADDITIONAL FLIGHTS MAY BE OPERATED AS REQUIRED.

TIME—STANDARD TIME is used throughout this folder for the various zones, and is referred to as:

(NST) Newfoundland Standard Time. (CST) Central Standard Time.
(AST) Atlantic Standard Time. (MST) Mountain Standard Time.
(EST) Eastern Standard Time. (PST) Pacific Standard Time.
(GMT) Greenwich Mean Time.

Times from 12.01 (Midnight) to and including 12.00 Noon are shown in light-face figures, and times from 12.01 (Noon) to and including 12.00 midnight are shown in dark-face figures.

INTERNATIONAL FLIGHTS—Passengers are responsible for possessing valid passports and/or other documents as specified by the laws of the countries from and into which passengers are to fly. All TCA offices are prepared to advance general information regarding such requirements.

Passengers must arrive at the airport in time to permit completion of Governmental or other formalities before flight departure, and TCA cannot allow flights to be delayed for those failing to observe this requirement, and accepts no liability except to make refund of fare as permitted by tariff.

TCA airport Passenger Agents at the international boarding points have been instructed by the Authorities to deny passage to passengers whose documents are not entirely in order, and TCA accepts no liability for the consequences of such action.

(Red) Light Face Type (11.50) In

FLIGHT NOS.
VICTORIA
VANCOUVER

FLIGHT NOS.
VANCOUVER
LETHBRIDGE

FLIGHT NOS.
LETHBRIDGE
CALGARY
CALGARY
EDMONTON

FLIGHT NOS.
EDMONTON
CALGARY
CALGARY
LETHBRIDGE
LETHBRIDGE
MEDICINE HAT
SWIFT CURRENT
SASKATOON
REGINA
WINNIPEG
WINNIPEG
FORT WILLIAM - PORT ART
SAULT STE. MARIE
◎TORONTO

FLIGHT NOS.
TORONTO
OTTAWA
MONTREAL

FLIGHT NOS.
MONTREAL
‡MONCTON
SAINT JOHN (Pennfield Ridge
YARMOUTH
HALIFAX
HALIFAX
SYDNEY
SYDNEY
GANDER
ST. JOHN'S

‡Connections to and from CHA

FLIGHT NOS.
SEATTLE (P
VICTORIA

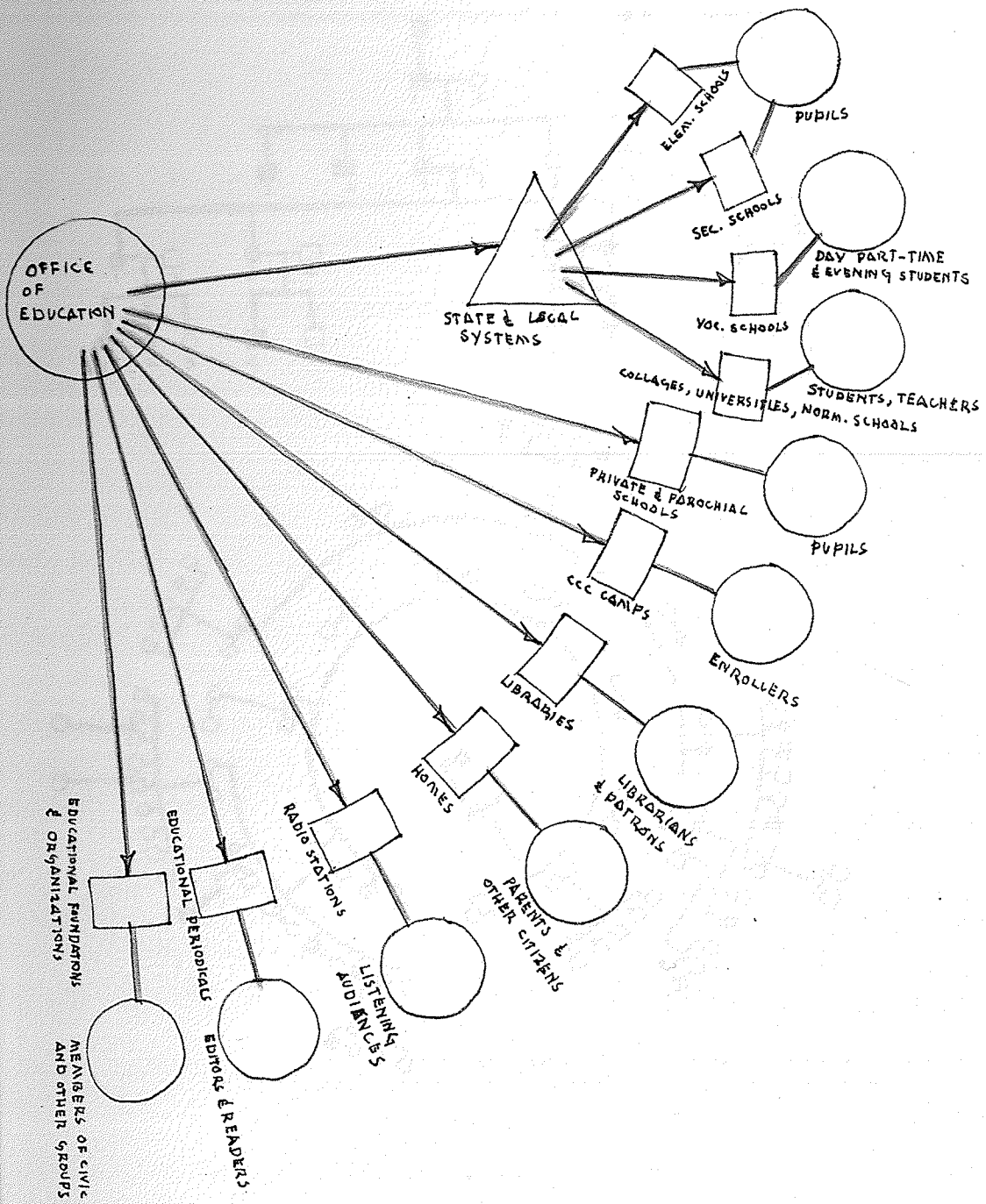
FLIGHT NOS.
CHICAGO
WINDSOR
◊WINDSOR
CLEVELAND
LONDON
◎TORONTO
◎TORONTO
NEW YORK
TORONTO
OTTAWA
MONTREAL

◊For DETROIT. ◎Connectio

FLIGHT NO.
KAPUSKASING (E
PORQUIS
NORTH BAY
NORTH BAY
TORONTO

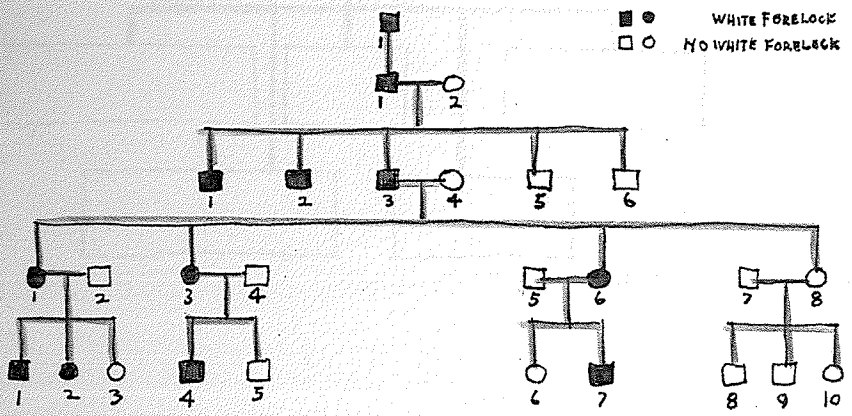
CLASSIFICATION CHARTS

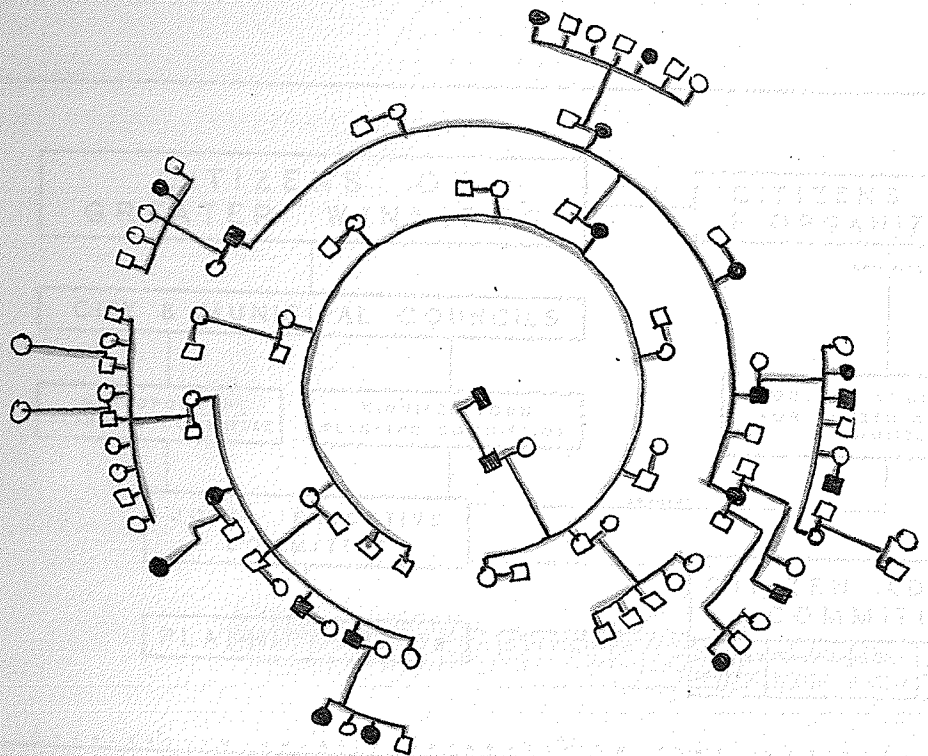
In a classification chart the facts, data, etc., are arranged so that the place of each in relation to all others is readily seen. Quantities need not be given, although a quantitative analysis adds to the value of a classification chart. Brackets and arrows are effective tools to use in a classification chart.



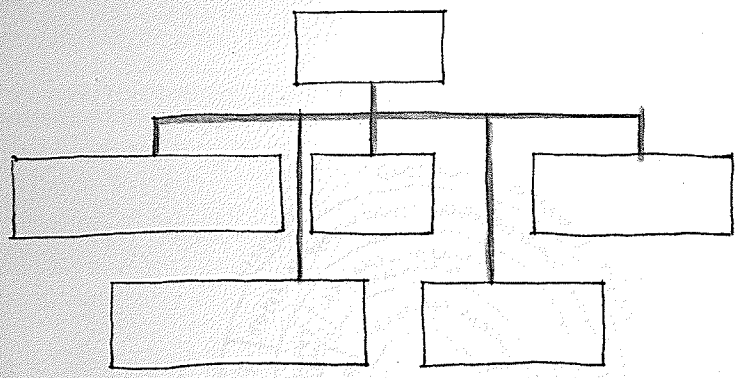
GENEOLOGY AND GENETICS CHARTS

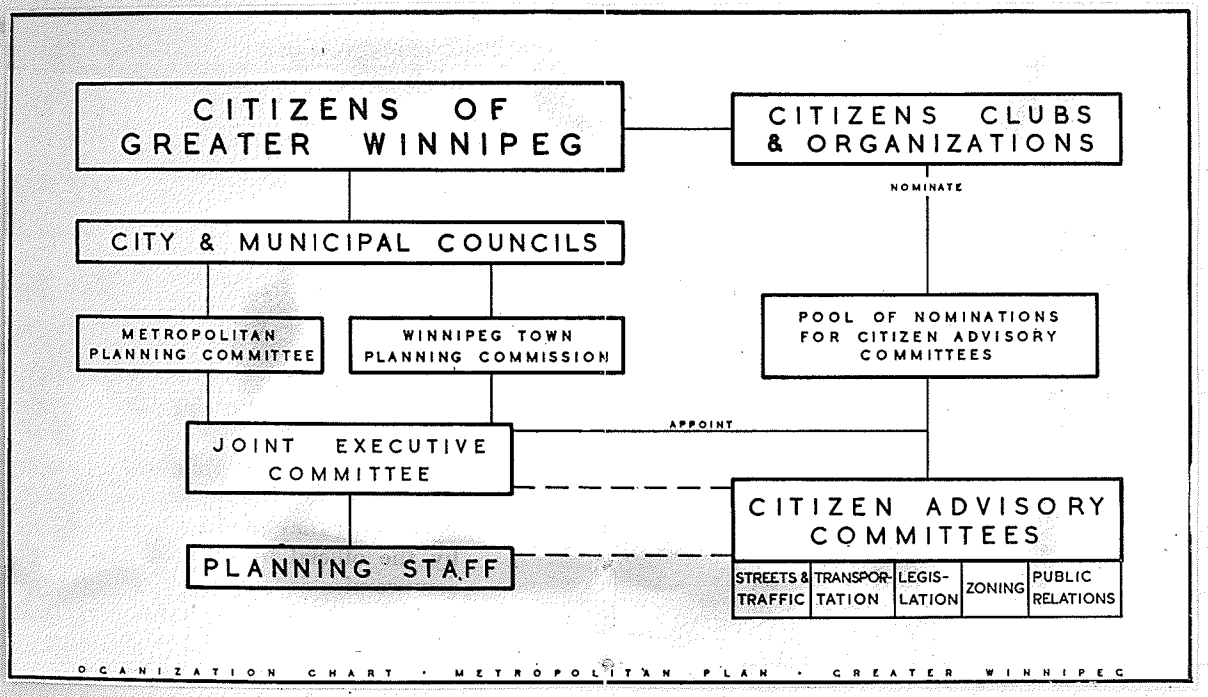
Geneology and genetics charts are known chiefly as means for tracing ancestors. Synonyms for geneology and genetics charts are: pedigree charts, genealogical charts, ancestral charts.





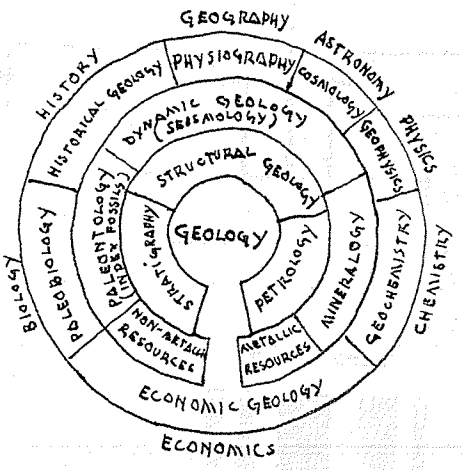
ORGANIZATION CHARTS

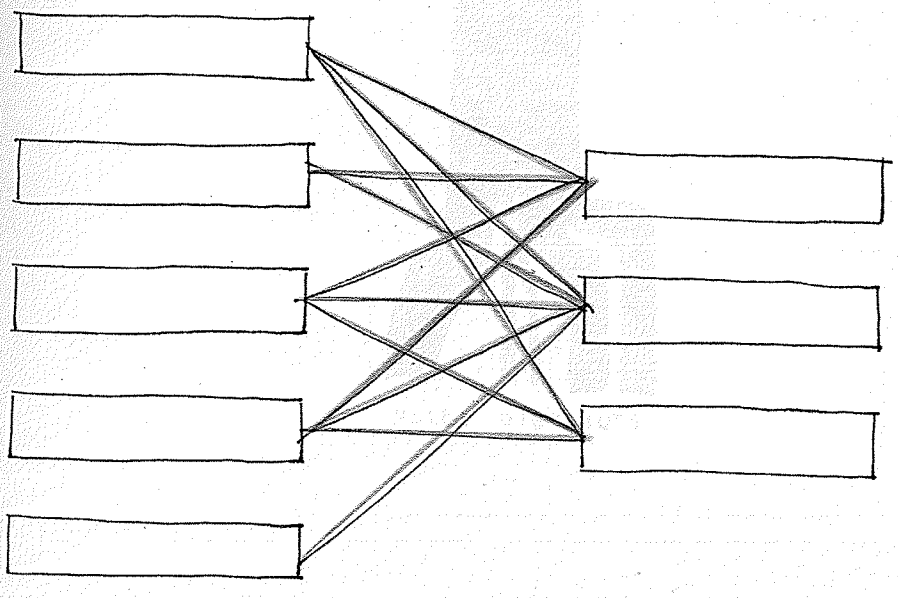




RELATIONSHIP CHARTS

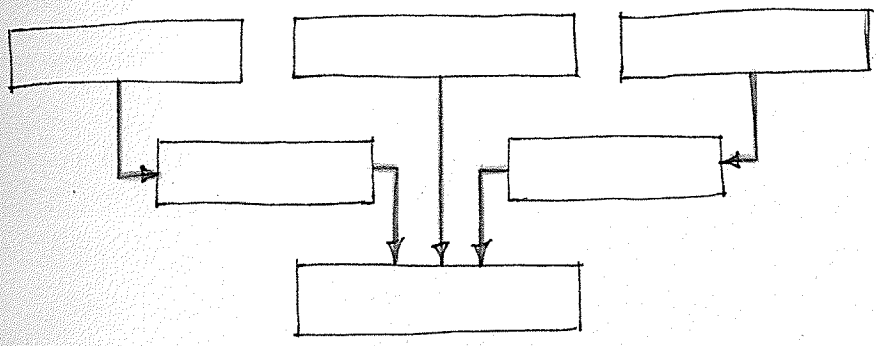
A "relationship chart" is a diagram in which facts, information, etc., are arranged to emphasize their relation. It differs from a classification chart in that relationships may be shown without any classification of the material used.

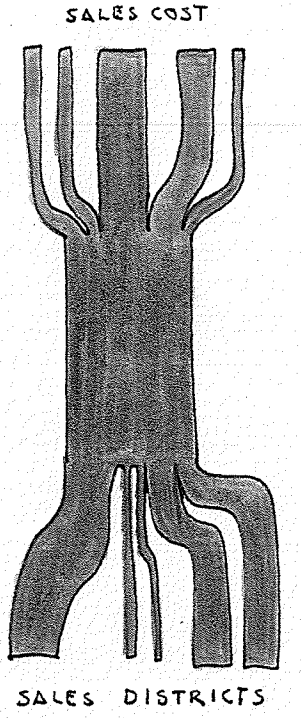




FLOW CHARTS

Flow charts present a graphic explanation of the movement of materials, printed forms, etc., through an organization or structure. "Cosmograph" is the trade name for a type of flow chart presenting numerical information or percentages by means of black and white strips of paper, showing source contrasted with destination.



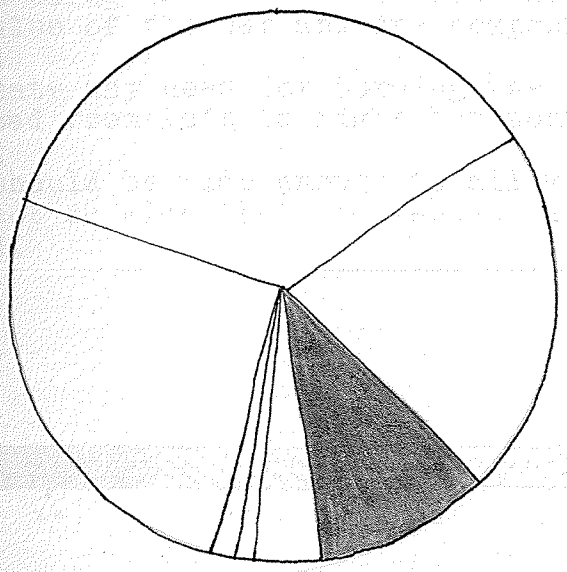


PLANNING

LAND USE

SECTOR CHARTS

A sector chart presents data in the form of a circle. The circle is divided along its radii so that the angle of each section is proportional to the factual data it represents. Other terms used for sector chart are: pie chart, divided circle. In practically every instance in which material is presented in a sector chart, the same information might also be presented in bar charts.

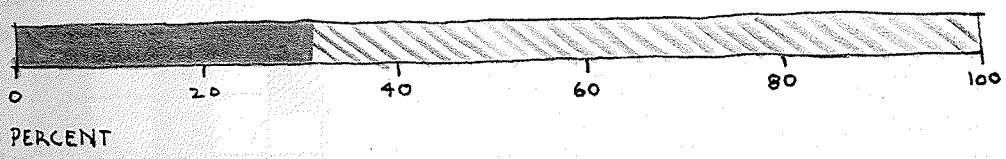


100% BAR CHARTS

A one hundred per cent bar chart is one in which a single bar represents 100% and the divisions of the bar represent percentages of the whole. Synonyms for 100% bar chart are: percentage bar chart, relative bar chart, componant parts bar chart.

CHARACTERISTICS OF A 100% BAR CHART:

1. A straight bar is easy to divide into parts representing approximate percentages, and is more convenient to use than a sector chart.
2. The sections may be shaded or colored for contrast.
3. Groupings of the parts are possible by using brackets or engineering dimension lines.
4. A percentage scale outside the bar is more easily read.
5. To aid in using the chart for reference purposes, the actual value of the bar and its componant parts should be given.
6. To eliminate any need for turning the bar, the labels should read from left to right horizontally wherever possible.
7. The bar should be wide enough to allow for differentiation, and yet not so wide that the facts presented are not distorted.



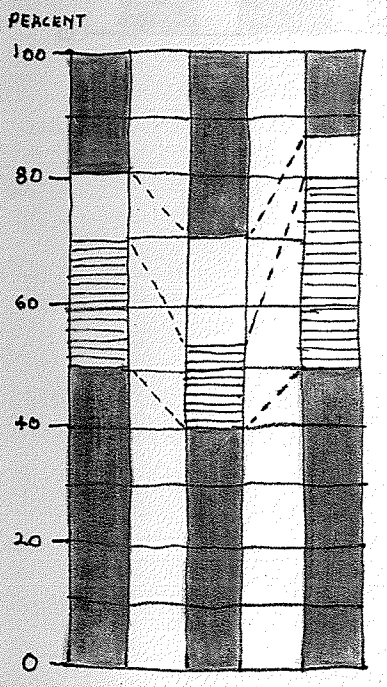
COMPARISON OF 100% BAR CHARTS.

The charts in this chapter are the same type as those shown in the preceeding chapter. The 100% bars are grouped for comparison purposes.

1. Since it is difficult to determine the approximate height or length of any one of the sections of the bar, it might be better to put the percentage scale at both left and right, or top and bottom.
2. The shadings should follow the general rule that when no one thing is important enough to be emphasized, the darker shadings should be next to the zero line. A section to be emphasized should be the darkest shade.
3. Connecting lines from one bar to the next aid the reader.

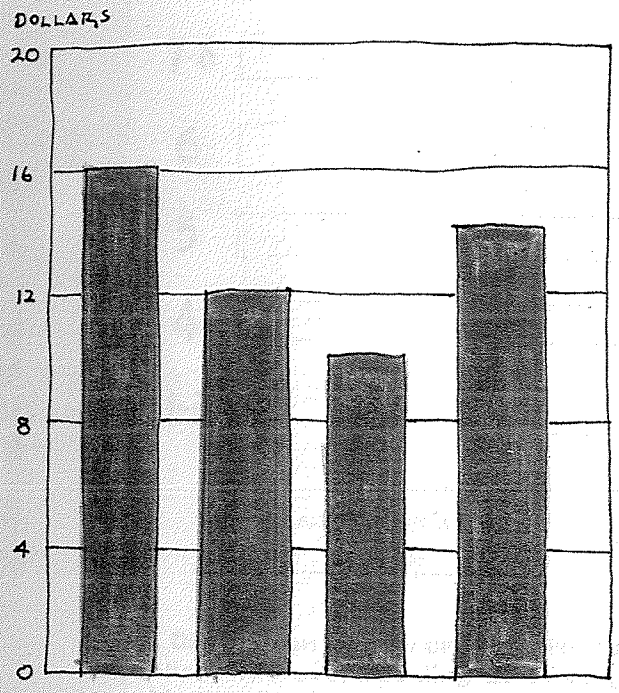
CHARACTERISTICS OF BAR CHARTS

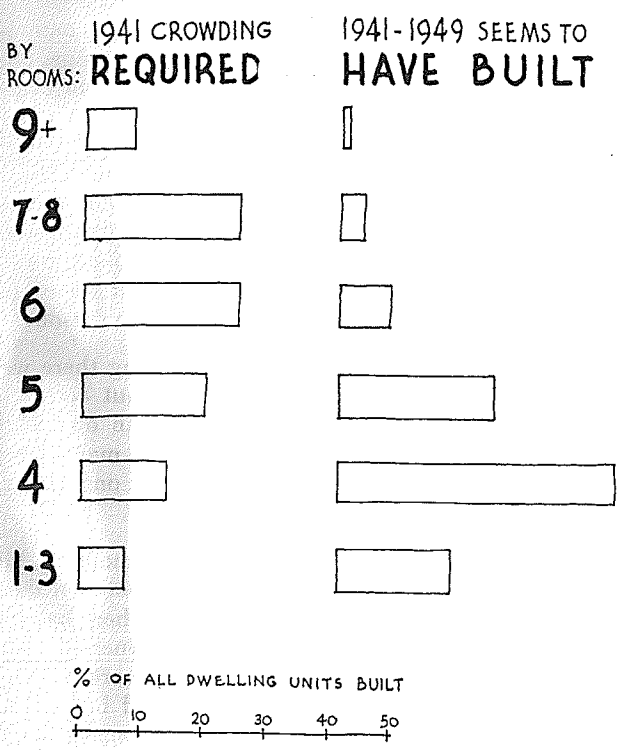
1. Bar charts may be adapted to meet almost any application.
2. The height of each bar is easily compared.
3. There should be some order for arrangement:
   a. Time-series.
   b. Magnitudes.
   c. Geographical
   d. Alphabetical
4. The actual amount which each bar gives or represents should be given.



MULTIPLE BAR CHARTS

Each of the bars in the charts shown in the two preceeding chapters represent 100%. Another use of the bar form is to have the length of the bars represent or indicate values. The following are synonyms for bar charts when they are in a vertical position: column chart, "pipe-organ" chart, "pipe-of-pan" chart, "flute-of-pan" Chart.

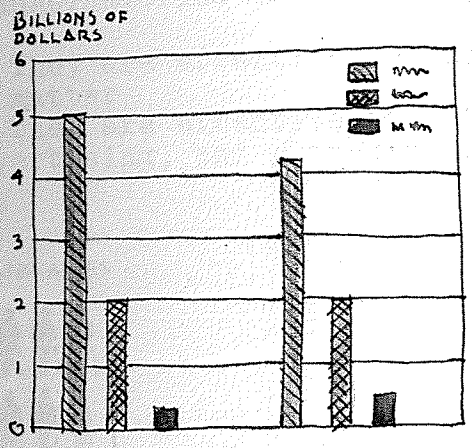




B. Distribution of new units by size as required to relieve the overcrowding of 1941 (left), alongside the distribution by size of units actually built since then (right)

CONTRASTING BAR CHARTS

One variation of the type of bar chart shown in the chapter preceeding is to differentiate the bars by using hachures, or shadings. Charts in which this technique is used are called contrasting bar charts.

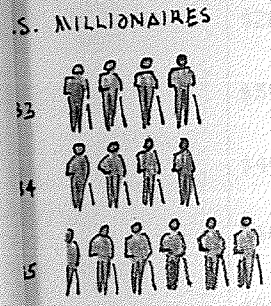


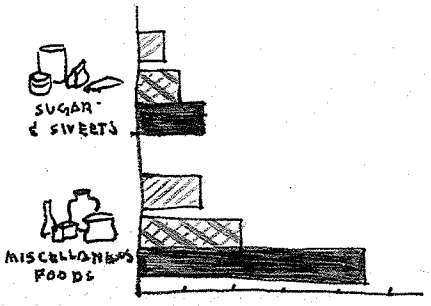
PICTORIAL UNIT BAR CHARTS

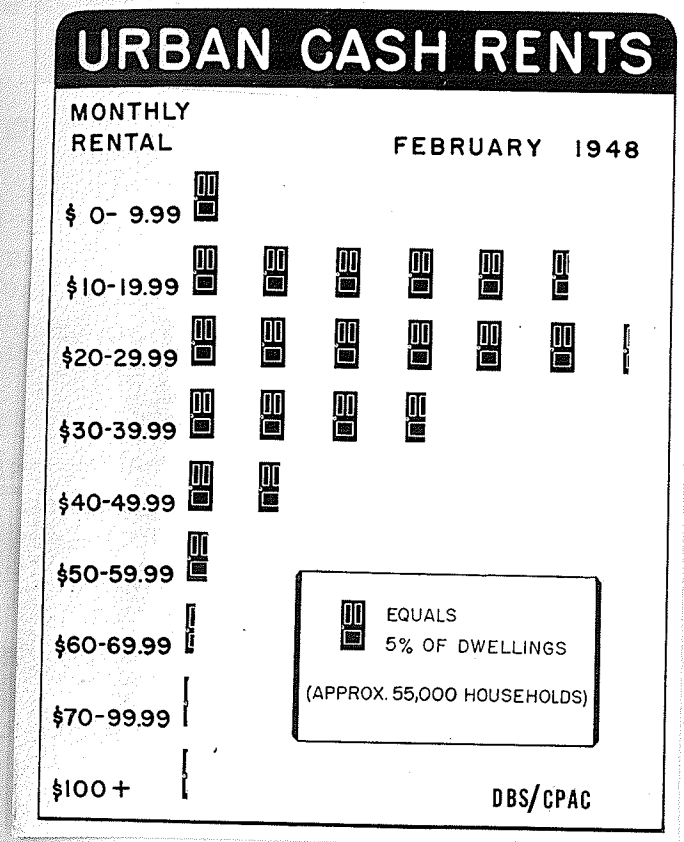
In a pictorial unit bar chart comparisons are made by using a number of symbols, each of which represents a specific value. Synonyms for pictorial charts are: pictogram, pictograph, The advantage of the pictorial unit bar chart over a chart in which large and small units are used is that there is a variation in one dimension only.

CHARACTERISTICS OF PICTORIAL UNIT BAR CHARTS:

1. They are effective for popular presentation of educational matter
2. They are effective to attract attention, and for publicity, advertising, and propaganda.





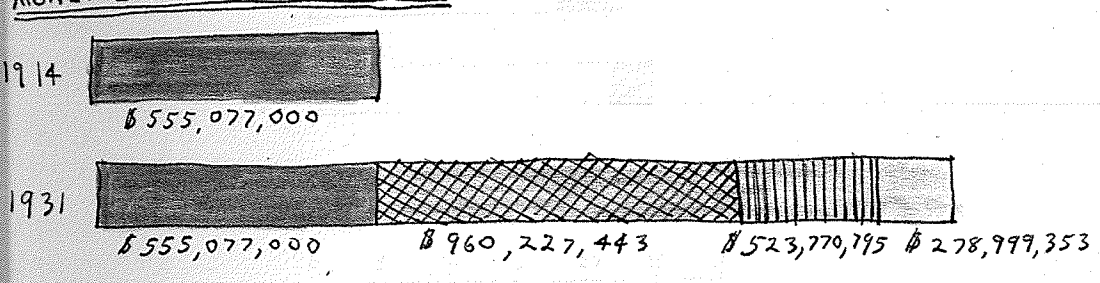

URBAN CASH RENTS
MONTHLY RENTAL
FEBRUARY 1948
$ 0- 9.99
$10-19.99
$20-29.99
$30-39.99
$40-49.99
$50-59.99
$60-69.99
$70-99.99
$100 +
EQUALS 5% OF DWELLINGS
(APPROX. 55,000 HOUSEHOLDS)
DBS/CPAC

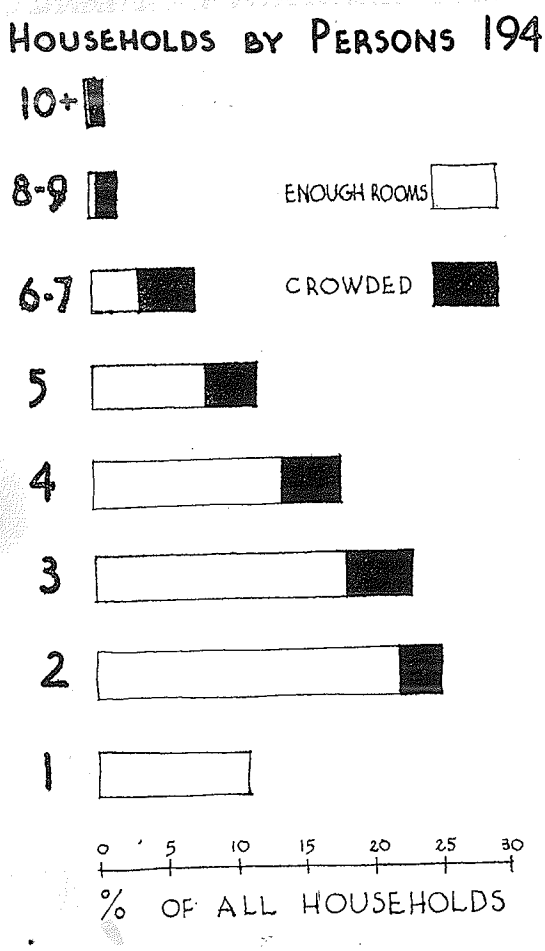
COMPARISON OF COMPONANT BAR CHARTS

The term "componant bar" charts may refer to any bar which has been divided into parts. The charts of the earlier bar chart chapters are componant bars in which each bar represents 100%, and the comparison of the componant parts is the important item. In this chapter, divisions of the bars are made without reducing all the bars to the same length.

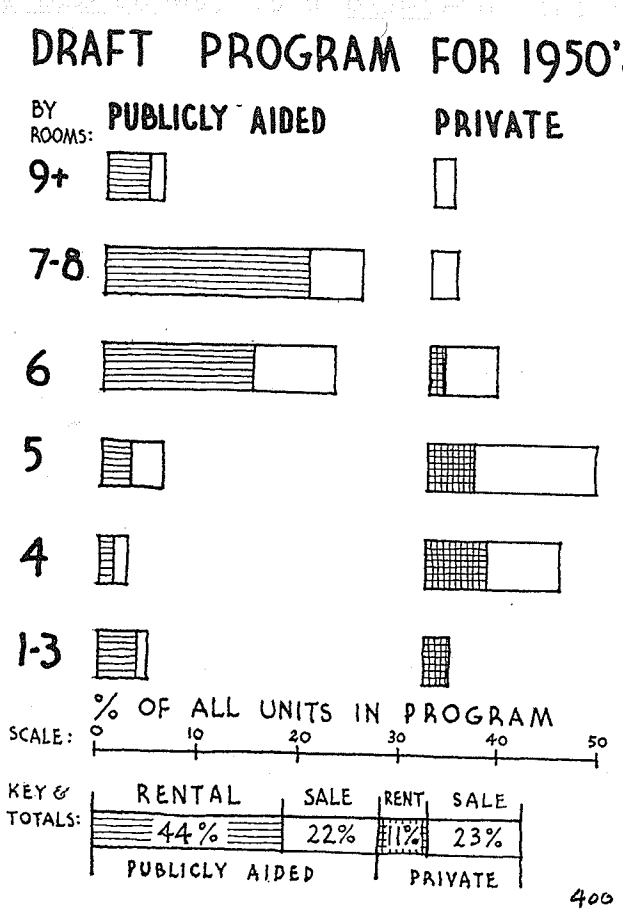
CHARACTERISTICS:

1. Both actual amounts and percentages should be given.
2. When there is one bar to represent the total of all the others, it should be the same width as all the others.
3. The amount scale may be placed at both the left and the right of the chart, or it may be placed on the side of greater significance.





A. Overcrowding (less than one room for each person) among the households in our town at the 1941 Census



D. Publicly assisted program for next few years (left) reckoned to emphasize larger units and rental units thus counterbalancing expected private construction (right); the combined program to take care of population increase as well as over-use and obsolescence of present dwellings

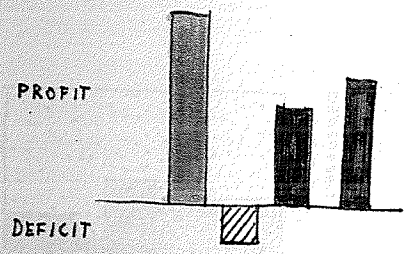
BILATERAL BAR CHARTS

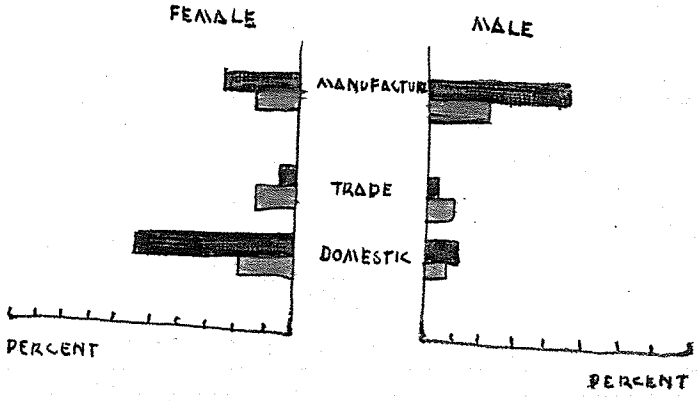
The term bilateral may refer to a curve or line chart as well as to a bar chart. In a bilateral bar chart the bars extend both up and down or both to the left and to the right of a common line.

This results in a comparison of the distances from the line to the ends of the bars rather than from the bottom or line at the left.

Bilateral bar charts are especially adapted to the presentation of profit and loss data or of deviations from the normal.

The following are synonyms for bilateral bar charts: two-way bar chart, two-directional bar chart.



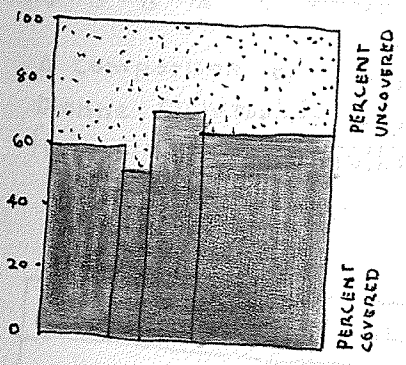


AREA BAR CHARTS

The basis of comparison in an area bar chart is the area of the bar rather than the length of the bar. Other terms applied to this type of chart are: I00% square, I00% block.

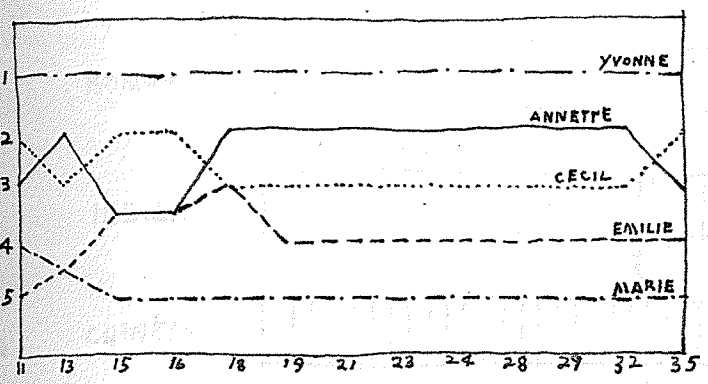
CHARACTERISTICS OF AREA BAR CHARTS:

I. Useful in presenting material which gives parts of a total.
2. They show in one view two independent groups of facts.
3. Area bar charts may take one of two forms:
   a. They may have one dimension in percentages of a total and the second dimension in numerical values.
   b. They may have both dimensions in percentages of two different totals. They then become I00% squares or blocks.

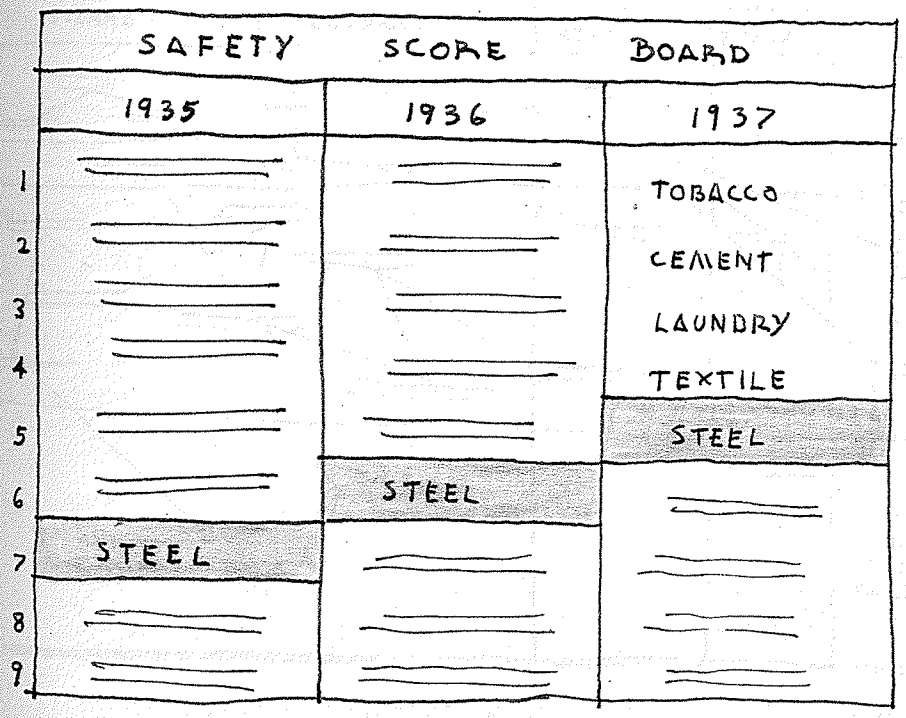


RATING CHARTS

In rating charts, the "rank" of items is presented in graphic form. The arrangement of the material is determined by the quantitative value of each item.

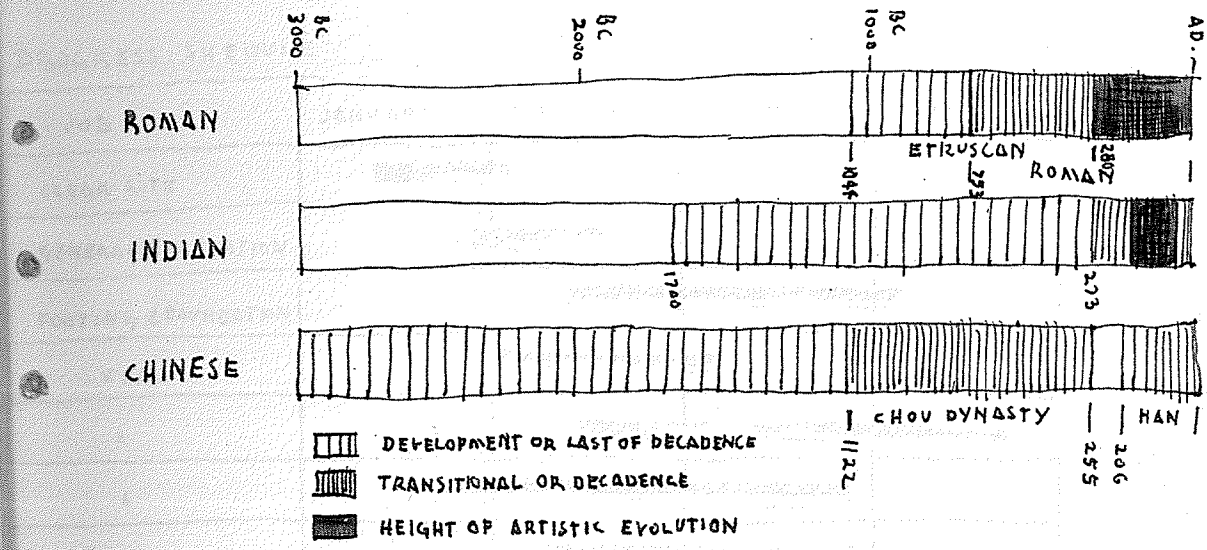


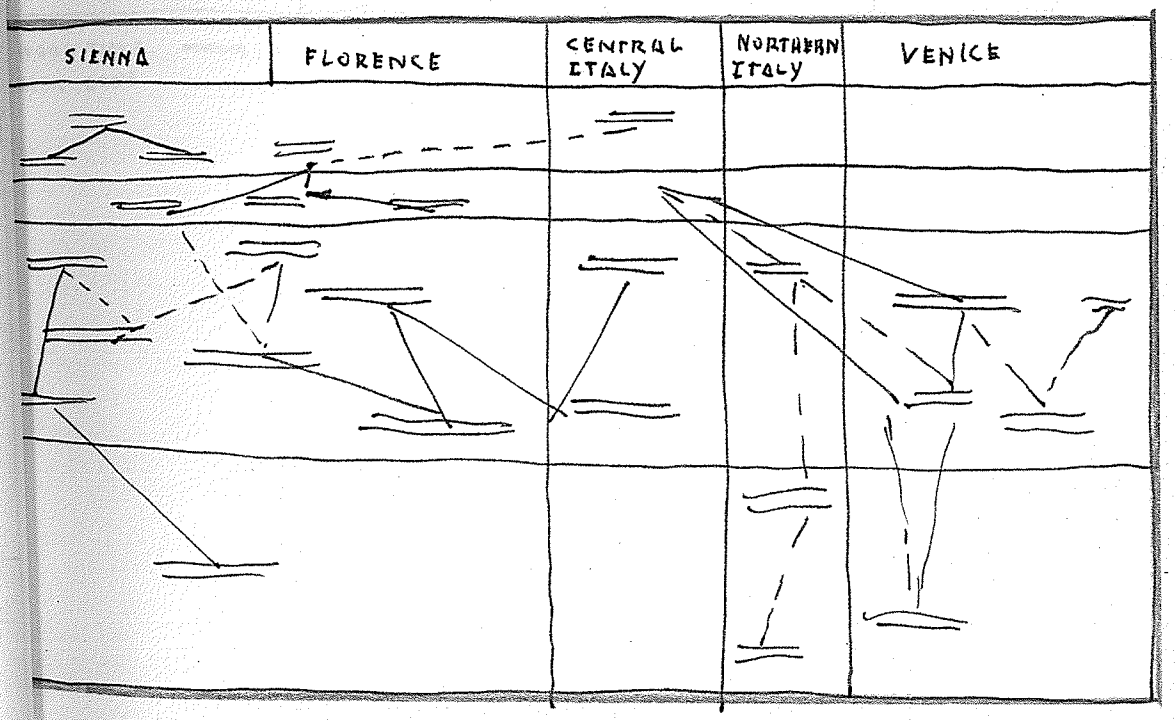
A comparison of the records of each of the Dionne Quintuplets in mental development from 12 to 35 months of age.



CHRONOLOGY CHARTS

The practice of showing time as a straight line is utilized in making chronology charts. Often the line is widened to make it possible to shade sections. Both quantitative and qualitative data may be presented.

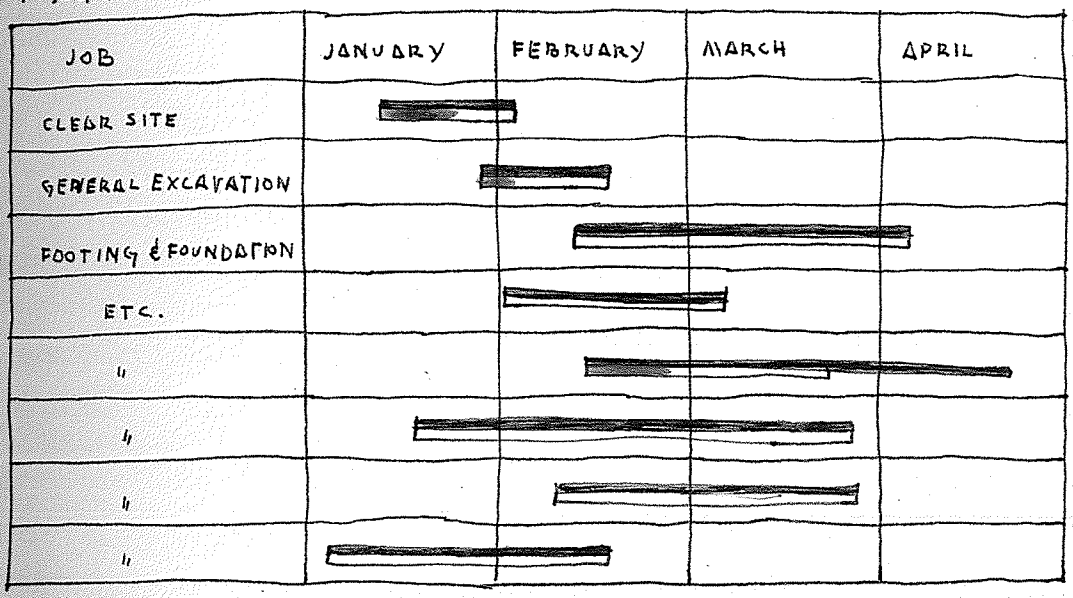




PROGRESS CHARTS

Synonyms for progress charts as used are: schedule charts, Gantt charts, Procedure charts, process charts, production control charts.

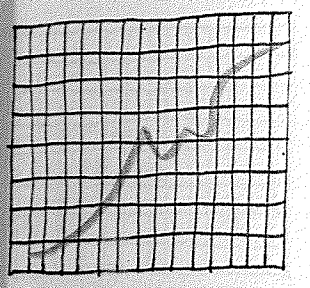
PROGRESS SHEDULE

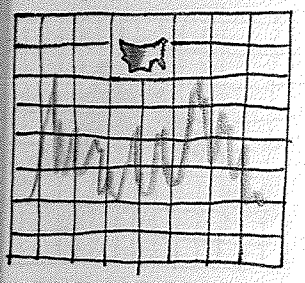


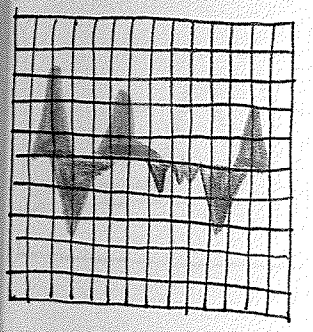
WORK TIME
WORK DONE

CURVE CHARTS

The curve charts in this chapter are only those which have one curve on a grid. This includes those having visual captions.

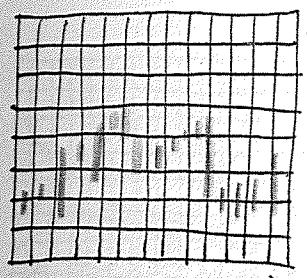




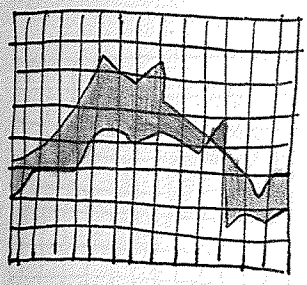


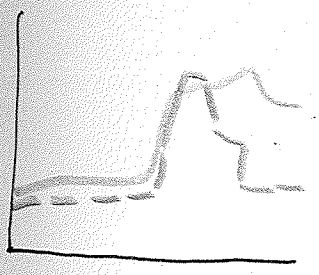
COMPARISONS WITH TWO CURVES

The types of curve charts covered in this chapter are simple comparisons of two curves, culminating curves, casual relationships, and high-low curves,



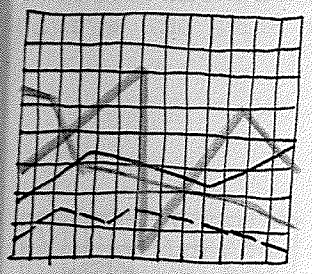
HIGH & LOW (EACH DAY)

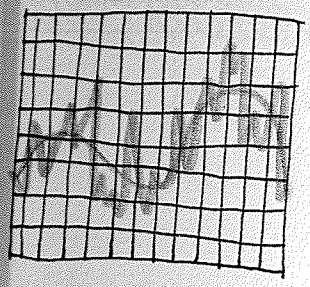




COMPARISONS WITH CURVES

The types of curve charts covered in this chapter are simple comparisons of more than two curves, progressive average curves, moving average curves, and normal trend curves.

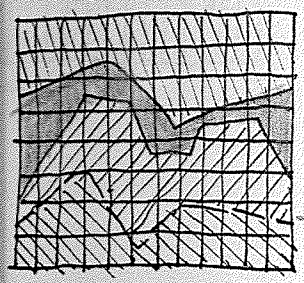




COMPONANT PARTS SHOWN BY CURVES

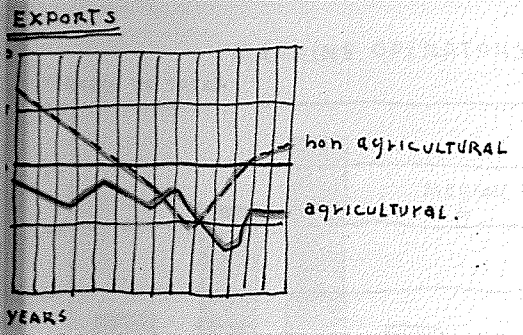
In the chapters on "I00%" bar charts" and "componant bar charts", the method of showing componant parts in bar chart form is illustrated. The charts in this chapter present the same type of information in the form of curves.

Other terms used for charts in which componant parts are shown by curves are percentage charts, band charts, I00% band charts, percentage band charts, and surface charts. All the charts present the material on the basis of I00% except for surface charts and band charts.



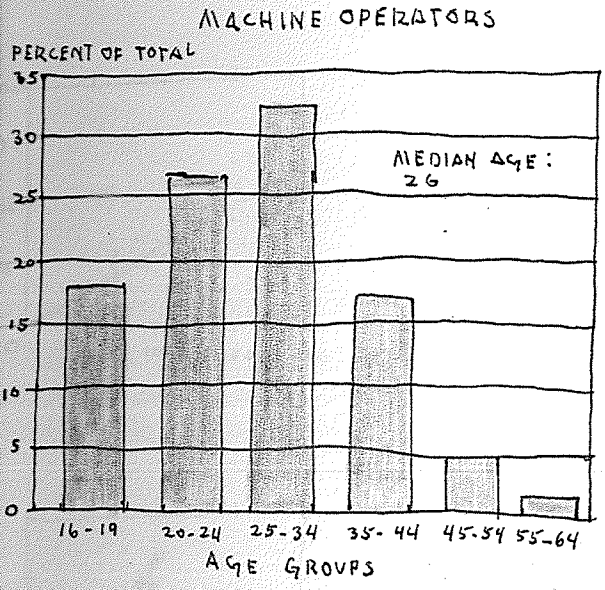
INDEX NUMBERS SHOWN BY CURVES

In a chart showing index numbers, I00 is used as the basis of comparison. In computing index numbers, one item or the average of several consecutive items is represented as I00. All other items are expressed as percentages of the base.

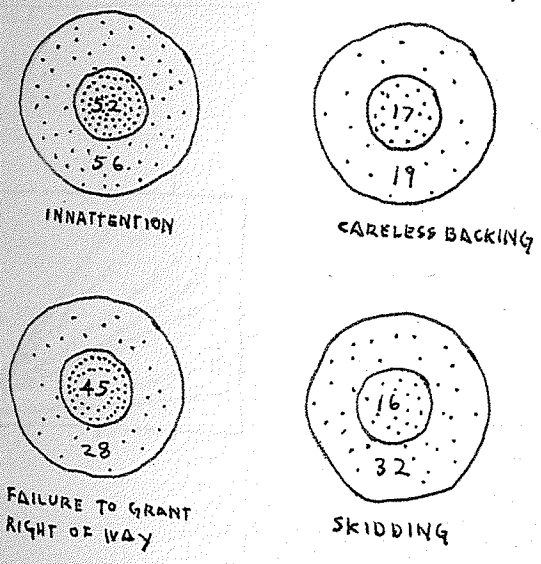


FREQUENCY CHARTS

The charts in this chapter present data showing frequency distribution. The most common basis of classification or arrangement are according to kind, size, location, or time of occurrence. Other types of names or terms that may be applied to this type of chart are histogram, distribution chart, and block diagram. When the curve in a frequency chart assumes the shape of a bell, it may be called a bell curve chart.



DISTRIBUTION OF CAUSES OF ACCIDENTS

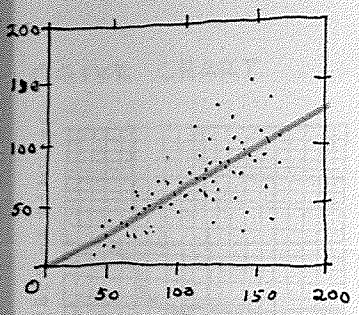


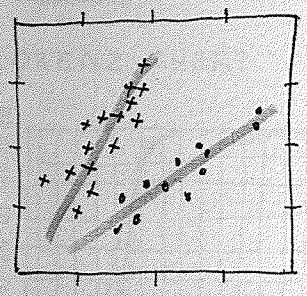
Small circle = congested section of city

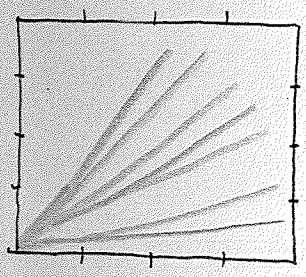
AREA between large & small circle = rest of city

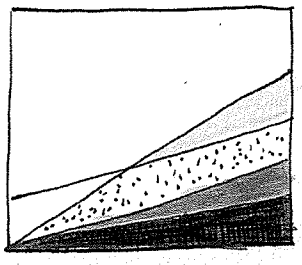
CORRELATION CHARTS

The purpose of correlation charts is to indicate the degree and type of relationship between variables. One form of correlation chart, the scatter diagram, also called the gun-shot or shot-gun chart and buckshot chart, sometimes indicates that there is no relationship between two variables.







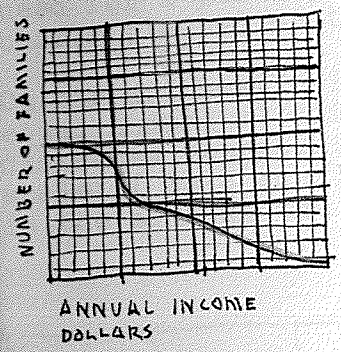


OGIVE AND LORENZ CHARTS

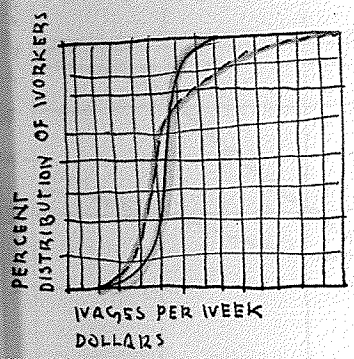
The Ogive chart is also called a cumulative frequency curve. Its definition is as follows: a freqaency distribution in which "more than" or "less than" data are presented. One scale of the grid represents percentages and the other scale represents "more than" or "less than" values.

A Lorenz chart gives ffequency distribution when both the variable and invariable quantities are reduced to percentages. The curve is plotted on a grid on which both the horizontal and the vertical scales represent I00%

OGIVE CHART



LORENZ CHART



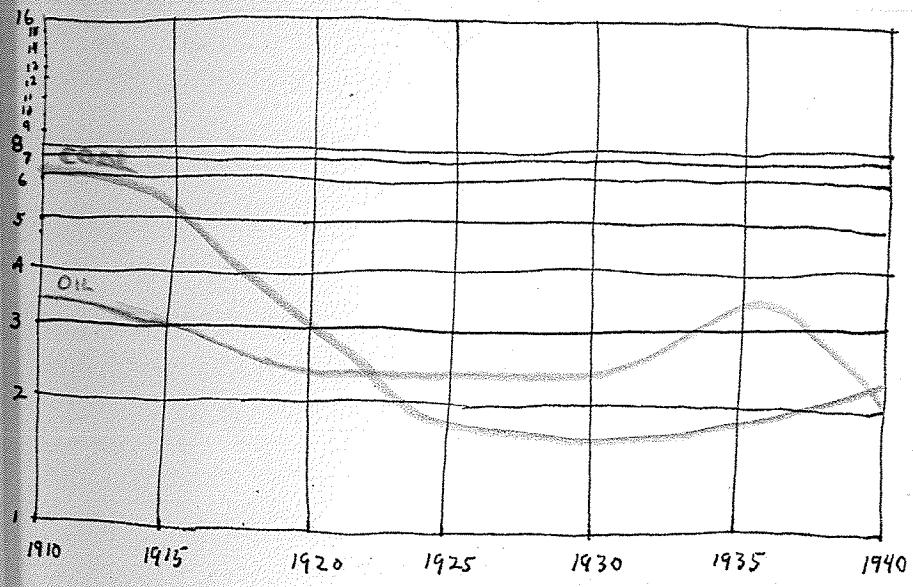
RATIO CHARTS

A ratio chart is designed to indicate rate of change rather than arithmetic change. Although in many instances the spacing of the rulings clearly indicates to an experienced reader that the chart is plotted on ratio ruling, it is frequently desirable to indicate the ratio basis as being closer or farther apart for reasons of clarity. This is especially necessary if the chart covers a comparatively short range of scale since the reader might not notice the difference in spacing of horizontal lines on the grid.

Synonyms for ratio chart are logarithmic chart, semi-logarithmic chart, rate-of-change chart.

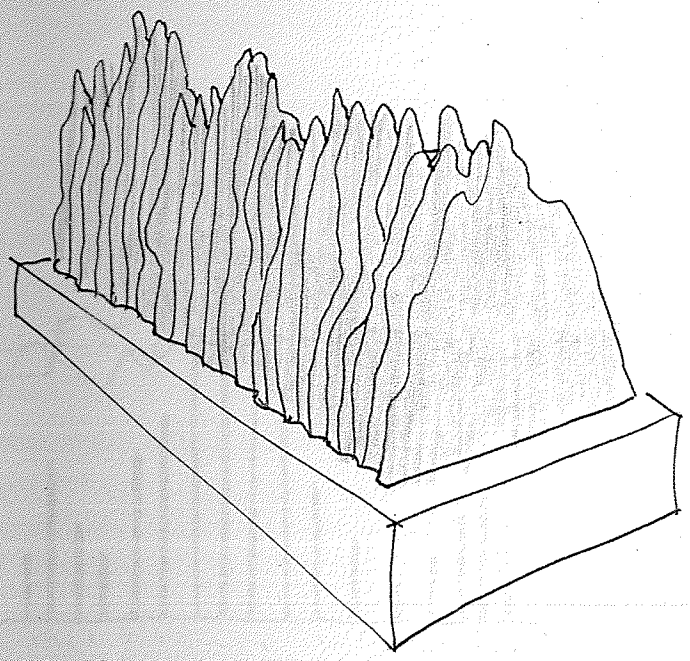
The term"ratio chart"is short and expressive. There is a need for a corresponding term equally expressive to designate charts planned on the usual arithmetic basis.

On the arithmetic scale, equal vertical distances represent equal numerical differences; on the ratio scale, eqal vertical distances represent equal percentage distances. (e.g. arithmetic scale: I to 2 equals 2 to 3 distances: ratio scale: I to 2 is the same as the distance from 2 to 4, 4 to 8, etc.)



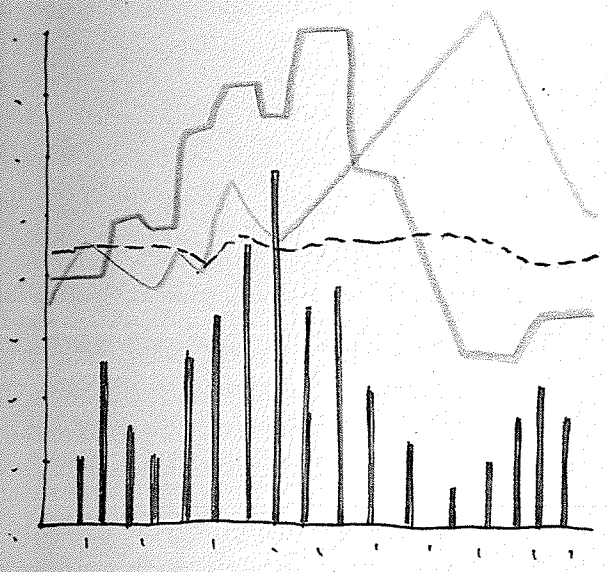
THREE DIMENSIONAL METHODS

By means of three dimensional models, isometric block diagrams, and trilinear charts, it is possible to present three variables in the form of curves rather than the usual two.



COMPOSITE CHARTS

To present a more complete picture it is often desirable to combine several different types of charts. The charts may be combined in many combinations and is mostly up,to the ingenuity of the delineator.



LAND USE PLANNING

SUGGESTIONS FOR MAKING A CHART.

The first problem in producing a chart, assuming that the data have been gathered, is in the choice of materials to be used in drawing it. Often the materials at hand in the office or draughting room are suffieient. It is also possible to plan the production of a chart, basing all the plans on the materials at hand.

PAPER

The test for the selection of paper on which to draw is to try the drawing medium upon it; that is, the ink, pencil, paint, or crayon, and see the result. Cross section paper drawing materials may be secured; such as rectangular coordinate graph paper, or ratio or logarithmic chart paper.

RUBBER CEMENT

Rubber cement is a "must" in the draughting room or the copy room. It does notwrinkle paper and may be used for a temporary joining, as well as for a permanent one.

Transparent MATERIALS

Transparent materials may be used to great advantage in comparing curves, bars, or other types of graphic charts. The charts are drawn directly on the transparent material. When placed over each other, a clear comparison is possible.

CRAYONS

A wide variety of pencils and crayons is offered. There are colored pencils, wax crayons, pressed crayons, water crayons, etc. Lumber crayons may be used for extremely heavy work.

Pasted colored papers

The problem of putting color on a graphic chart is further simplified by the use of colored paper.

I. Plain colored paper may be pasted on with rubber cement.
2. Colored paper with a gummed back may be obtained either in tape form or in sheets.
3. Colored paper with a back which adheres to any clean smooth surface and which requires no water may be obtained in a variety of widths and colors.

Inks should be of the waterproof type.

LAND USE PLANNING

PLANNING

LAND USE

PLAN

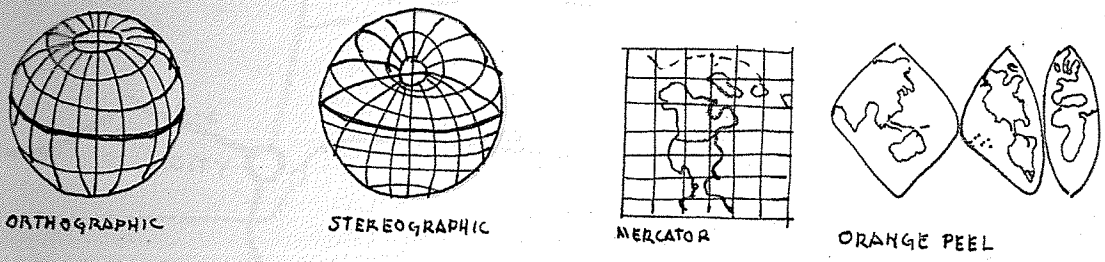
PLANNING

LAND USE

GENERAL USE OF MAPS

Dots, circles, bars, curves, symbols, etc., may be placed on a base map to give the geographical location of statistical data. When used in this way, the general term " statistical map" may be applied. Synonyms for statistical map are: cartogram, map chart.

When the discovery was made that the earth was round, map-makers were faced with the problem of how to present on a plane a picture which was best presented by a globe. This involved transforming the lines of latitude on the earth into planer magnitudes. Two solutions to this problem are maps drawn on Orthographic and Stereographic Projection on the plane of the horizon. E.g.



Another method is that of a"developed" projection. The term "developed" is derived from the method: a cylindrical or conical surface is substituted for the plane of projection and then is"developed" or rolled out in a plane. The two types of projection most commonly used today are the Mercator and the polconic.

The Mercator projection was first introduced in I568 by Gerardus Mercator, a Flemish lecturer in Geography and Astronomy. In the Mercator projection a tanjent cylinder is employed. The meridians and parallels of latitude cut each other at right angles and are represented by straight lines.

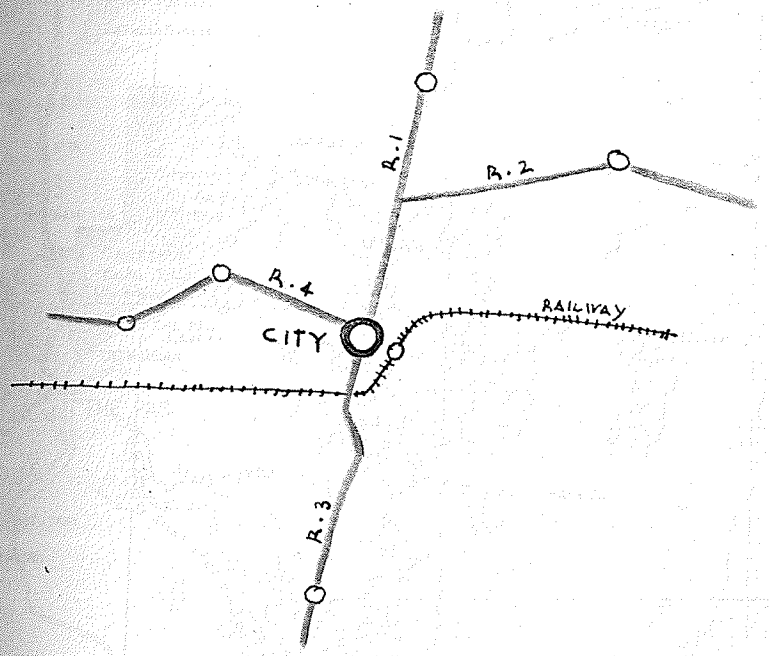
The polyconic projection employs an infinite number of cones or tangent cones, to be more specific. The starting point for these cones is at the middle parallel or latitude of the area mapped.

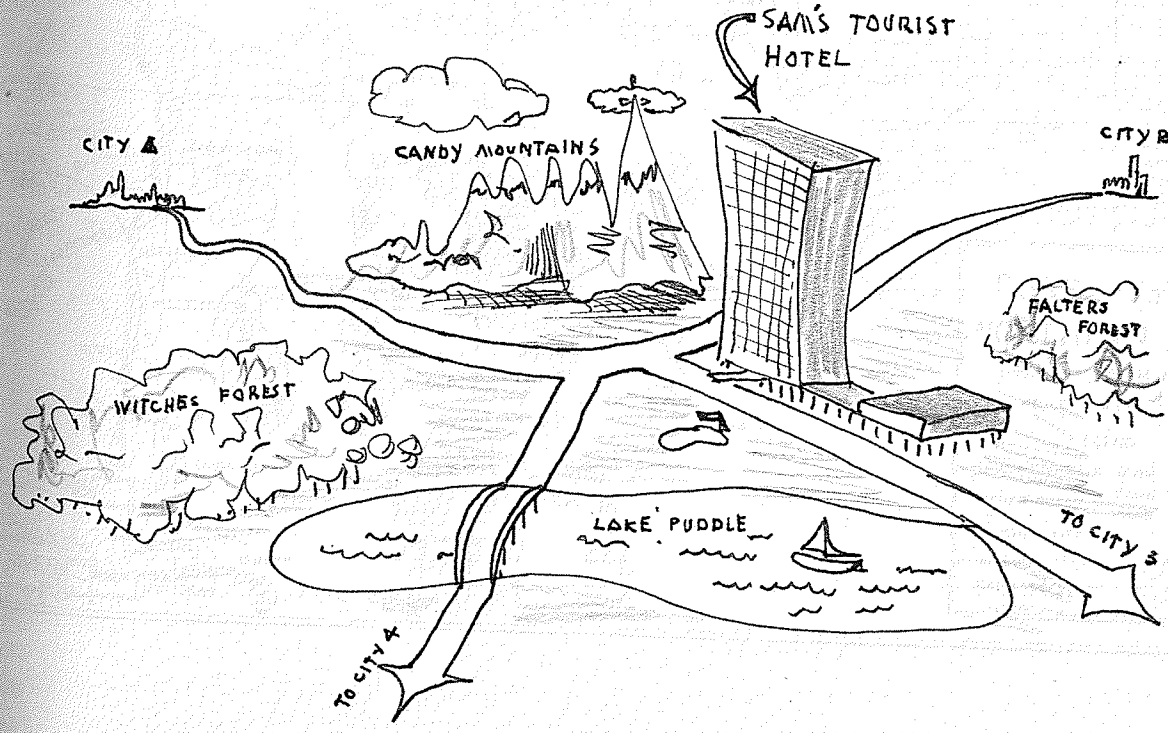
Another type of projection is that employed in making the Modern"Orange Peel Map" in which all areas are shown in their correct proportions.

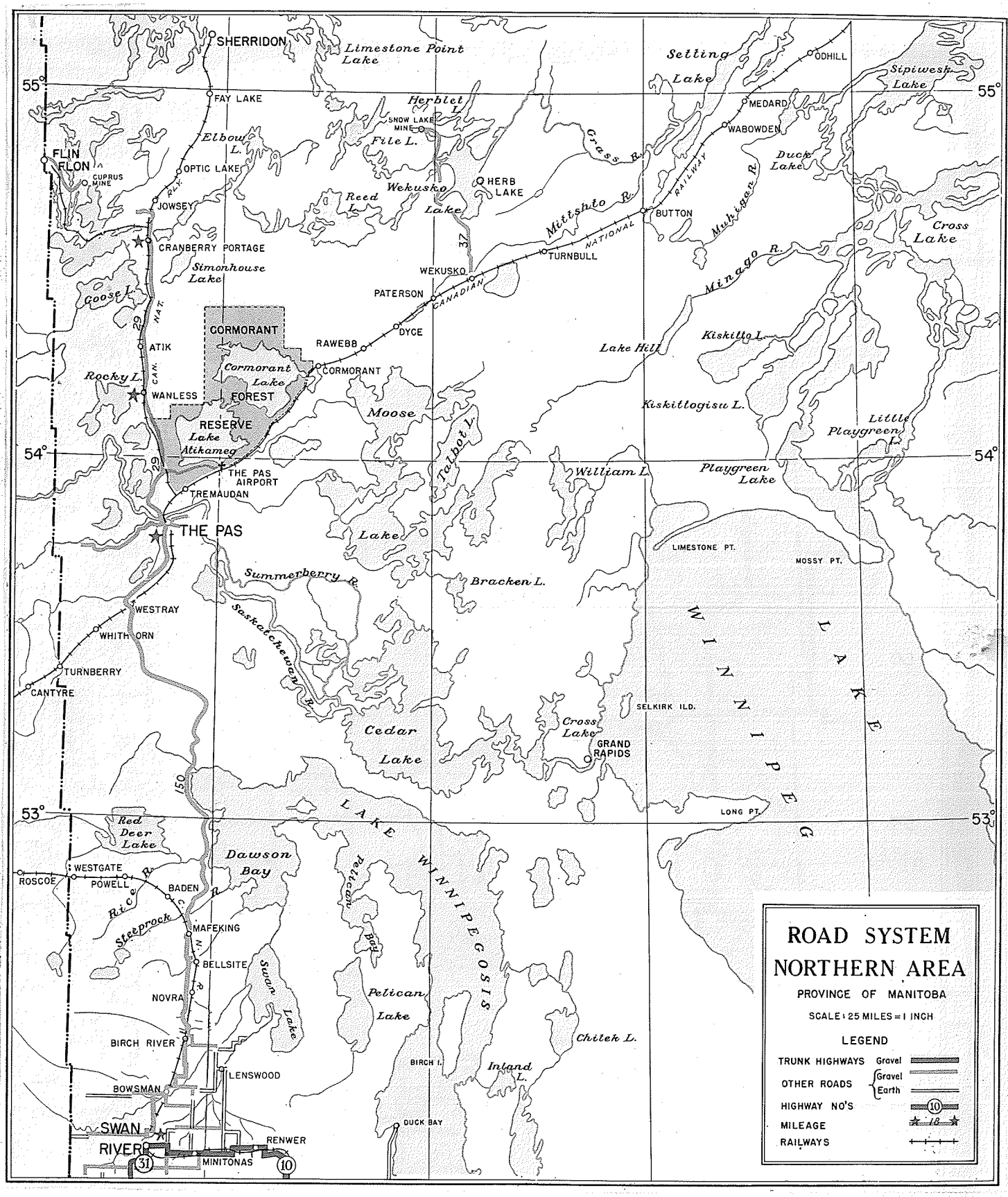
Last but not least is the globe or relief globe method of presenting maps and data.

GUIDE AND ROUTE MAPS

One purpose of guide and route maps is to show details which might be helpful in planning moves from one point to another. The form of guide and route maps is well known, and may be used for classifications as well as for routes.

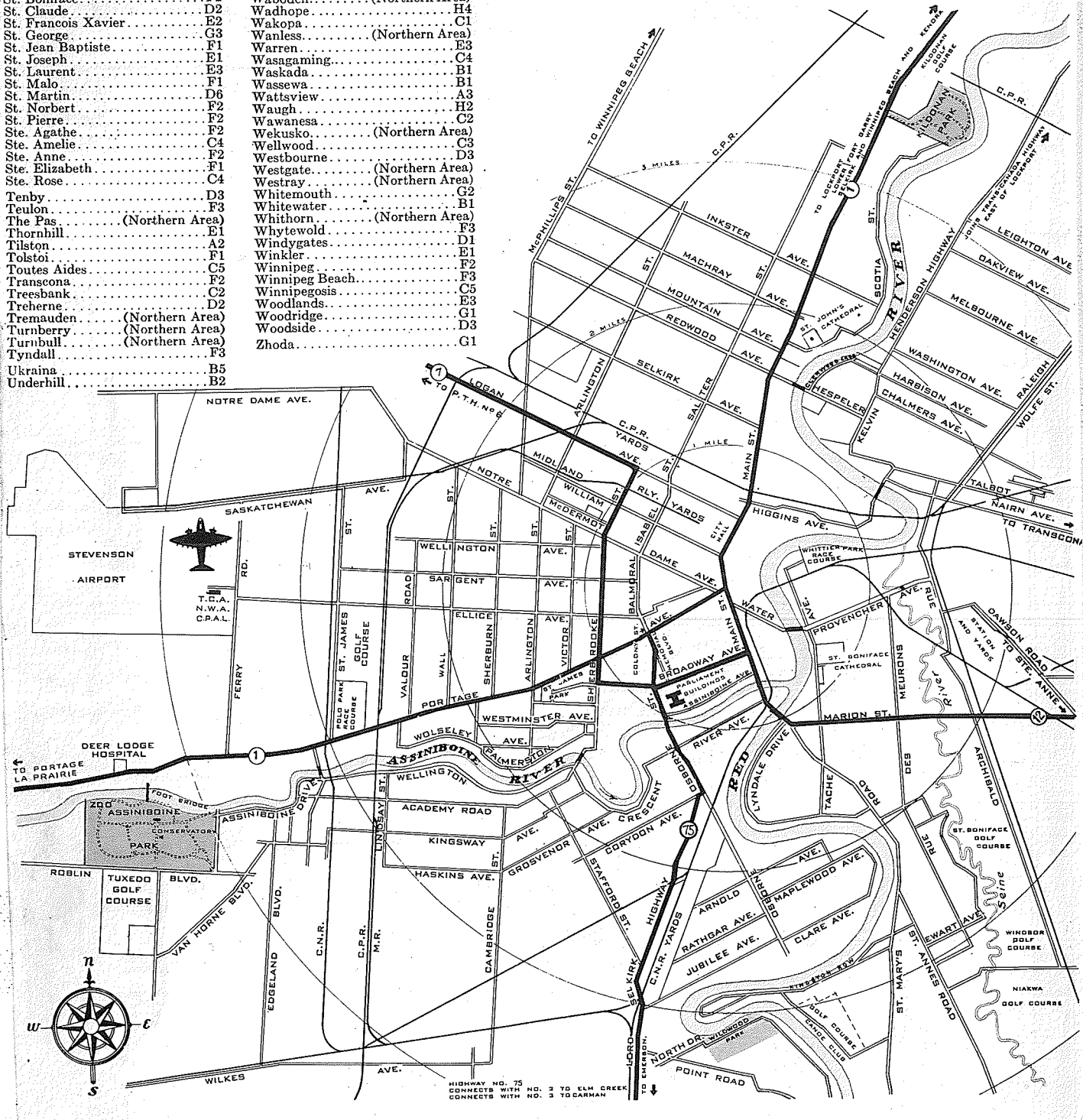


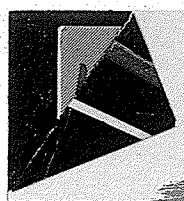



SHERRIDON
Limestone Point Lake
Selting Lake
ODHILL
Sipiwesk Lake
55°
FAY LAKE
Herblet L.
MEDARD
SNOW LAKE MINE
WABOWDEN
Elbow L.
File L.
Grass R.
FLIN FLON
CUPRUS MINE
OPTIC LAKE
Duck Lake
Wekusko Lake
HERB LAKE
Reed L.
JOWSEY
Mittsho R.
BUTTON
Mukigan R.
RAILWAY
CRANBERRY PORTAGE
Cross Lake
Simonhouse Lake
WEKUSKO
TURNBULL
NATIONAL
Minago R.
Goose L.
PATERSON
CANADIAN
CORMORANT
Kiskittogisu L.
ATIK
RAWEBB
DYCE
Lake Hill
Rocky L.
CORMORANT
Cormorant Lake
WANLESS
FOREST
RESERVE
Moose
Talbot L.
Little Playgreen L.
Lake Atikameg
54°
THE PAS AIRPORT
TREMAUDAN
William L.
Playgreen Lake
THE PAS
Lake
LIMESTONE PT.
MOSSY PT.
Summerberry R.
Bracken L.
WESTRAY
Saskatchewan R.
WHITHORN
TURNBERRY
CANTYRE
WINNIPEG LAKE
SELKIRK ILD.
Cedar Lake
Cross Lake
GRAND RAPIDS
150
53°
LONG PT.
Red Deer Lake
Dawson Bay
LAKE WINNIPEGOSIS
WESTGATE
ROSCOE
POWELL
BADEN
Rice R.
Pelican Bay
Steeprock R.
MAFEKING
BELLSITE
Swan Lake
NOVRA
Pelican Lake
BIRCH RIVER
Chitek L.
BIRCH I.
Inland L.
LENSWOOD
BOWSMAN
DUCK BAY
SWAN RIVER
RENWER
MINITONAS
31
10
ROAD SYSTEM
NORTHERN AREA
PROVINCE OF MANITOBA
SCALE 1 25 MILES = 1 INCH
LEGEND
TRUNK HIGHWAYS Gravel
OTHER ROADS Gravel Earth
HIGHWAY NO'S 10
MILEAGE 16
RAILWAYS

TOURIST MAP
OF THE
CITY OF WINNIPEG
AND VICINITY

Stony Mountain	F3
Strathclair	B3
Stuartburn	F1
Sundown	G1
Swan Lake	D2
Swan River	A7
St. Adolphe	F2
St. Alphonse	D2
St. Ambroise	E3
St. Boniface	F2
St. Claude	D2
St. Francois Xavier	E2
St. George	G3
St. Jean Baptiste	F1
St. Joseph	E1
St. Laurent	E3
St. Malo	F1
St. Martin	D6
St. Norbert	F2
St. Pierre	F2
Ste. Agathe	F2
Ste. Amelie	C4
Ste. Anne	F2
Ste. Elizabeth	F1
Ste. Rose	C4
Tenby	D3
Teulon	F3
The Pas	(Northern Area)
Thornhill	E1
Tilston	A2
Tolstoi	F1
Toutes Aides	C5
Transcona	F2
Treesbank	C2
Treherne	D2
Tremauden	(Northern Area)
Turnberry	(Northern Area)
Turnbull	(Northern Area)
Tyndall	F3
Ukraina	B5
Underhill	B2
Union Point	F2
Valley River	B5
Vassar	G1
Victoria Beach	F4
Virden	A2
Vista	B4
Vita	F1
Vivian	G2
Waboden	(Northern Area)
Wadhope	H4
Wakopa	C1
Wanless	(Northern Area)
Warren	E3
Wasagaming	C4
Waskada	B1
Wassewa	B1
Wattsview	A3
Waugh	H2
Wawanesa	C2
Wekusko	(Northern Area)
Wellwood	C3
Westbourne	D3
Westgate	(Northern Area)
Westray	(Northern Area)
Whitemouth	G2
Whitewater	B1
Whithorn	(Northern Area)
Whytewold	F3
Windygates	D1
Winkler	E1
Winnipeg	F2
Winnipeg Beach	F3
Winnipegosis	C5
Woodlands	E3
Woodridge	G1
Woodside	D3
Zhoda	G1





Merchandise of Particular Interest to American Visitors

We have a comprehensive collection of merchandise on each of our eight shopping floors that will be of particular interest to our American visitors. You will find gifts to suit almost any taste . . . or articles for the home that will serve as constant reminders of your visit to Canada.

Current regulations regarding United States Tourist Purchases are contained in an insert for your guidance.

MAIN FLOOR—Handkerchiefs of Irish Linen; Swiss, English and other imported fashion accessories. **English Silverware** and Cutlery; English Leather Handbags, Wallets; also **Diamonds** imported under Commonwealth trade.
Men's Clothing, of fine imported woollens; imported sweaters.
Gloves in fine French leathers.
Exquisite French Perfumes and Colognes.

SECOND FLOOR—EATON'S Trapper Point Blankets; all wool, specially processed in England. Bold colors or boudoir pastels. Our values in Point Blankets are among the finest.
Irish Linens and other table linens.
British Wool Coatings and Suitings.
Imported Needlepoint and Petitpoint.

THIRD FLOOR—English Cycles, English Leather Luggage, Canadian Rawhide Luggage, Imported Chinaware, Pottery and Crystalware.

FOURTH FLOOR—Magnificent Furs and Fur Wraps. Women's Shetland and Cashmere Wool Sweaters; English and French Silk Blouses.

FIFTH FLOOR — Wearables for the Young People.

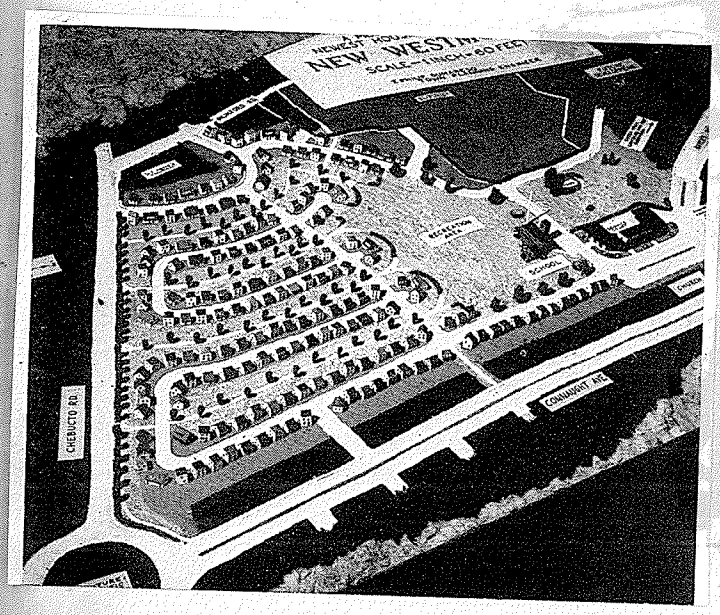
SIXTH FLOOR—Beautiful hand woven Oriental Rugs.
Fine furnishing fabrics including British and Continental Imports.

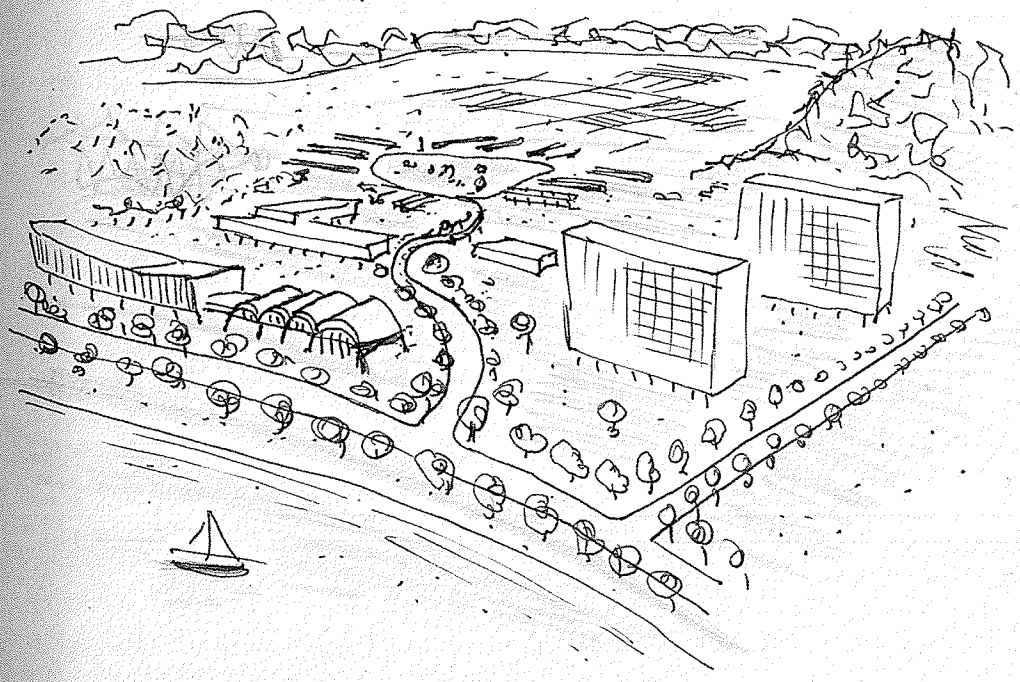
SEVENTH FLOOR—Imported Musical Instruments. English China Electric Lamp Bases; Czecho-Slovakian Crystal Chandeliers and Novelty Lamps.

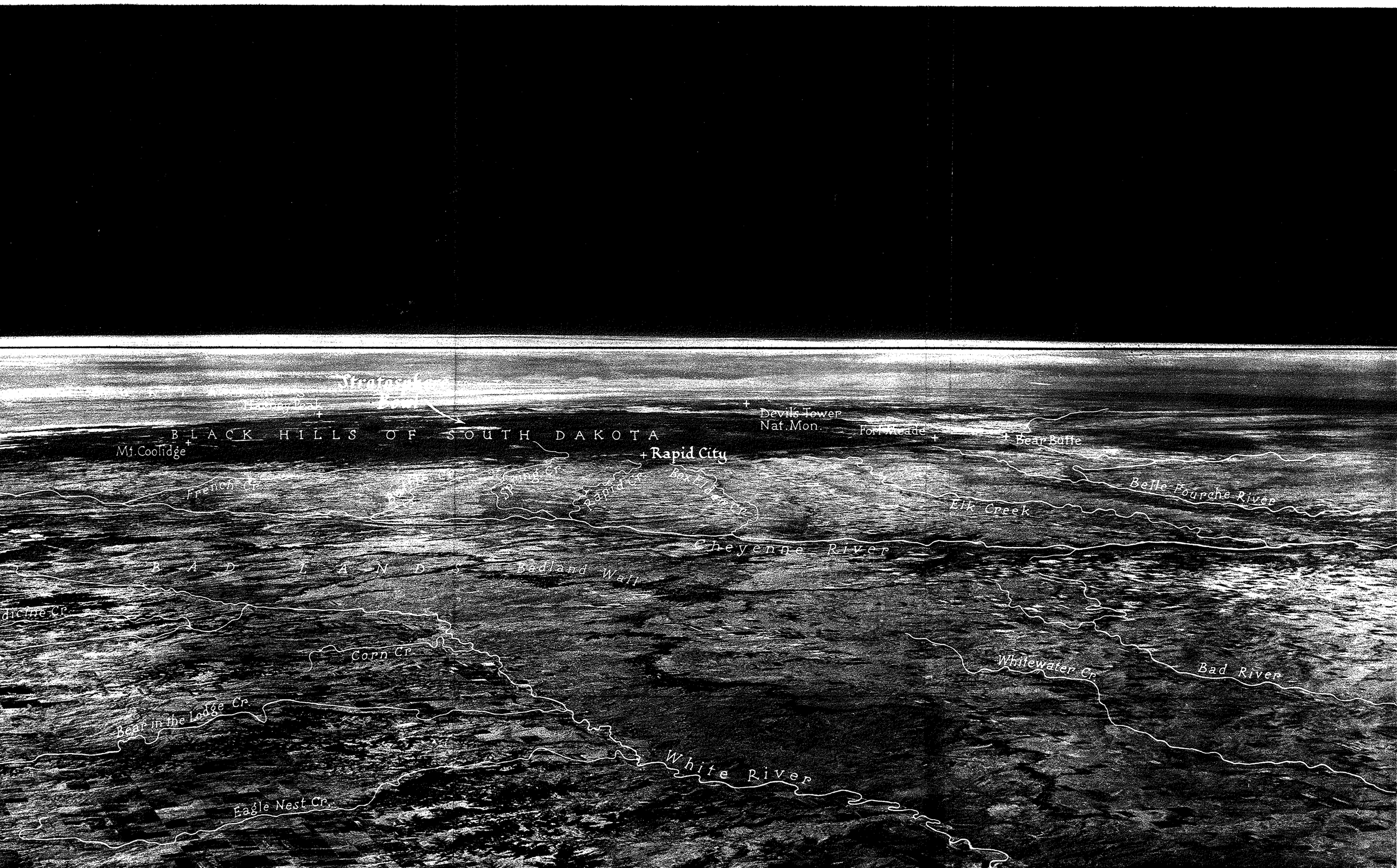
GIFT SHOPS — for convenience and time saving—will be found on our Second and Sixth Floors; offering good choice from many sections throughout the store.

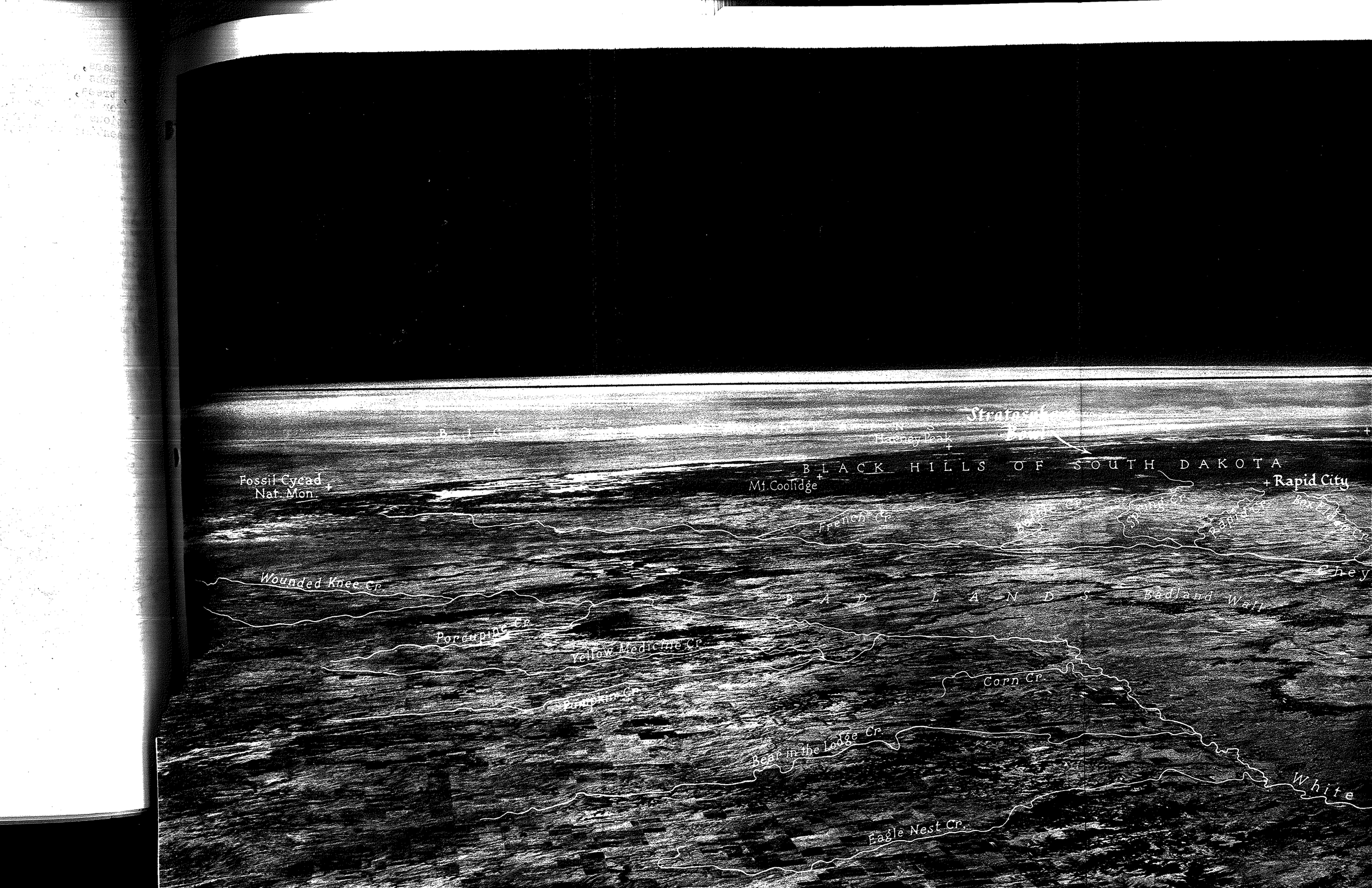
RELIEF AND AERIAL MAPS

Aerial maps, whether actual photograps, drawings, or photographs of models give a birds-eye view of buildings, roads, trees, mountains, cities, etc. Relief maps are best known for their use in showing elevations and surface undulations of a country, but may be used effectively also in presenting statistical data.






Devil's Tower
Nat. Mon.
Fort Meade
Bear Butte
B L A C K H I L L S O F S O U T H D A K O T A
Mt. Coolidge
Rapid City
French Cr.
Rapid Cr.
Elk Creek
Belle Fourche River
Cheyenne River
B A D L A N D S
Badland Wall
Corn Cr.
Whitewater Cr.
Bad River
Bear in the Lodge Cr.
White River
Eagle Nest Cr.


B L A C K H I L L S O F S O U T H D A K O T A
Fossil Cycad Nat. Mon.
Mt. Coolidge
Harney Peak
Rapid City
French Cr.
Wounded Knee Cr.
B A D L A N D S
Badland Wall
Porcupine Cr.
Yellow Medicine Cr.
Pumpkin Cr.
Corn Cr.
Bear in the Lodge Cr.
White
Eagle Nest Cr.



Photograph by Captain Albert W. Stevens

THE FIRST PHOTOGRAPH EVER MADE SHOWING THE DIVISION BETWEEN THE TROPOSPHERE AND THE STRATOSPHERE AND ALSO THE ACTUAL CURVATURE OF THE EARTH—PHOTOGRAPHED FROM AN ELEVATION OF 7

From its vantage point far up in the stratosphere, the camera has registered the horizon 330 miles away, sweeping like a great arch across the photograph. The straight black line has been ruled in to bring out clearly the curvature of this horizon, which is practically concentric with the earth's surface, and thus indicates the actual curvature of the earth.

This remarkable picture is most interesting to scientists, as the first photograph yet secured showing the boundary between the troposphere (the dust-laden region of rising and descending air currents, of clouds and variable temperature) and the stratosphere (the region of nearly constant temperature, above dust and air turbulence).

The abrupt change from light to dark on the horizon marks the top of the "dust sphere," the meeting surface or boundary between the lower air (troposphere) and the stratosphere. Its height varies with the season, with the latitude and with weather conditions. On November 11, 1935, over South Dakota, where this photograph was taken, this dust arc was approximately 37,000 feet above sea level. Although rising air currents are unable to penetrate this lower boundary to the stratosphere and to carry dust into it, volcanic eruptions have on rare occasions shot dust to tremendously greater heights.

The significance of the photograph is that both the camera and the target (the top of the "dust sphere") are in the stratosphere, that is, the line of sight is wholly through the stratosphere. Ninety-six per cent of the earth's atmosphere was below the camera when this picture was made at 72,395 feet. With only four per cent of the earth's atmosphere above this height, and that essentially free from dust, there is little to scatter sunlight; consequently the upper sky is very dark.

The photograph, which includes an area larger than the State of Indiana, was made from the balloon *Explorer II* of the National Geographic Society–U. S. Army Air Corps Stratosphere Flight, by Cap Albert W. Stevens, when over a point 35 miles south of Murdo, South Dakota.

The Big Horn Mountains of Wyoming and Montana, with patches of snow and dark forest, ca seen faintly near the horizon. The long, dark area in the middle ground is the Black Hills of South Dak more than 100 miles long, and from 120 to 180 miles away. The forest that covers the region gives dark color and so camouflages its mountains that they are not here distinguishable as mountains.

The little squares in the patch-work pattern of the left foreground are cultivated fields, many of t half a mile square. Houses, highways and railways are objects too small to be discernible from this g height and distance. The nearest objects in the foreground are more than 30 miles away.

This picture shows more than the human eye saw. To the eyes of the balloonists the horizon was



Copyright Supplement to the National Geographic Magazine, May, 1936

POSPHERE AND THE STRATOSPHERE AND ALSO THE ACTUAL CURVATURE OF THE EARTH—PHOTOGRAPHED FROM AN ELEVATION OF 72,395 FEET, THE HIGHEST POINT EVER REACHED BY MAN

ather conditions. On November 11, 1935, over South Dakota, where arc was approximately 37,000 feet above sea level. Although rising this lower boundary to the stratosphere and to carry dust into casions shot dust to tremendously greater heights.

n is that both the camera and the target (the top of the "dust sphere") ne of sight is wholly through the stratosphere. Ninety-six per cent the camera when this picture was made at 72,395 feet. With only e above this height, and that essentially free from dust, there is little upper sky is very dark.

an area larger than the State of Indiana, was made from the balloon *Explorer II* of the National Geographic Society–U. S. Army Air Corps Stratosphere Flight, by Captain Albert W. Stevens, when over a point 35 miles south of Murdo, South Dakota.

The Big Horn Mountains of Wyoming and Montana, with patches of snow and dark forest, can be seen faintly near the horizon. The long, dark area in the middle ground is the Black Hills of South Dakota, more than 100 miles long, and from 120 to 180 miles away. The forest that covers the region gives the dark color and so camouflages its mountains that they are not here distinguishable as mountains.

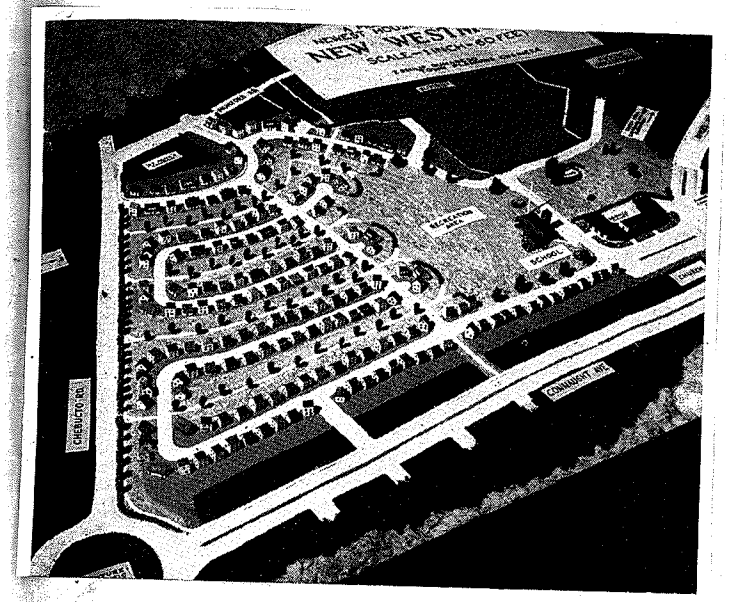
The little squares in the patch-work pattern of the left foreground are cultivated fields, many of them half a mile square. Houses, highways and railways are objects too small to be discernible from this great height and distance. The nearest objects in the foreground are more than 30 miles away.

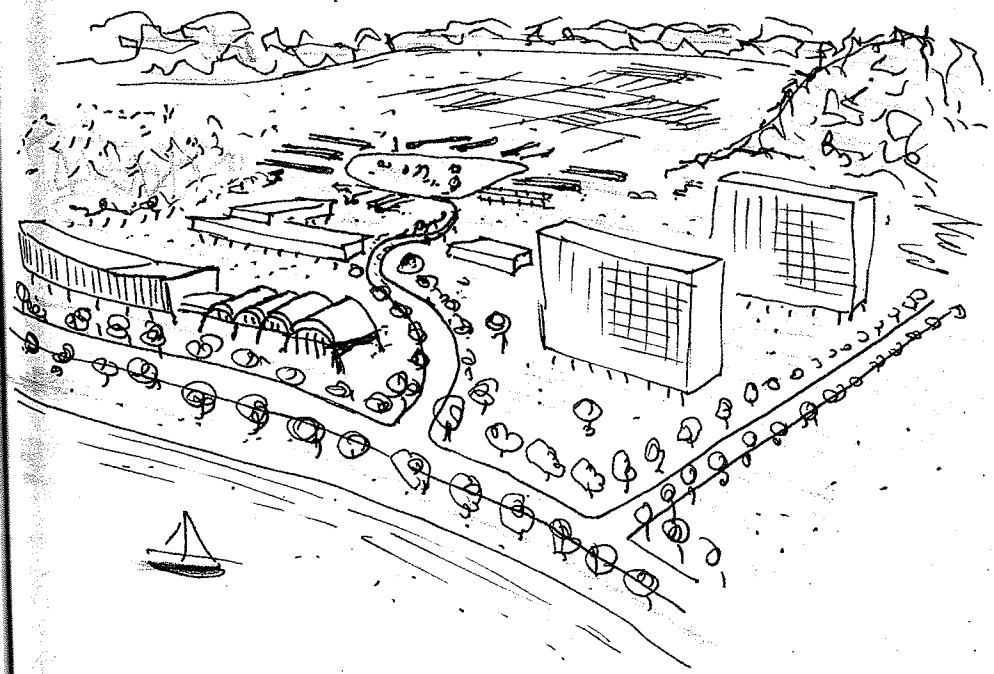
This picture shows more than the human eye saw. To the eyes of the balloonists the horizon was not clearly distinguishable. The earth and sky merged together in a band of white haze. Above this band the sky was a pale blue, while higher it became the usual sky blue. Still higher it had the appearance of the deep blue sky of mountain regions. At an angle of approximately 55 degrees above the horizon, the sky was very dark, almost black, with the merest suggestion of dark blue. If it had been possible for the balloonists, Captain Stevens and Captain Orvil A. Anderson, to see the sky directly overhead, it is altogether probable that it would have been as dark as a midnight sky, and that stars would have been visible. But the great balloon, floating immediately above, prevented such a view.

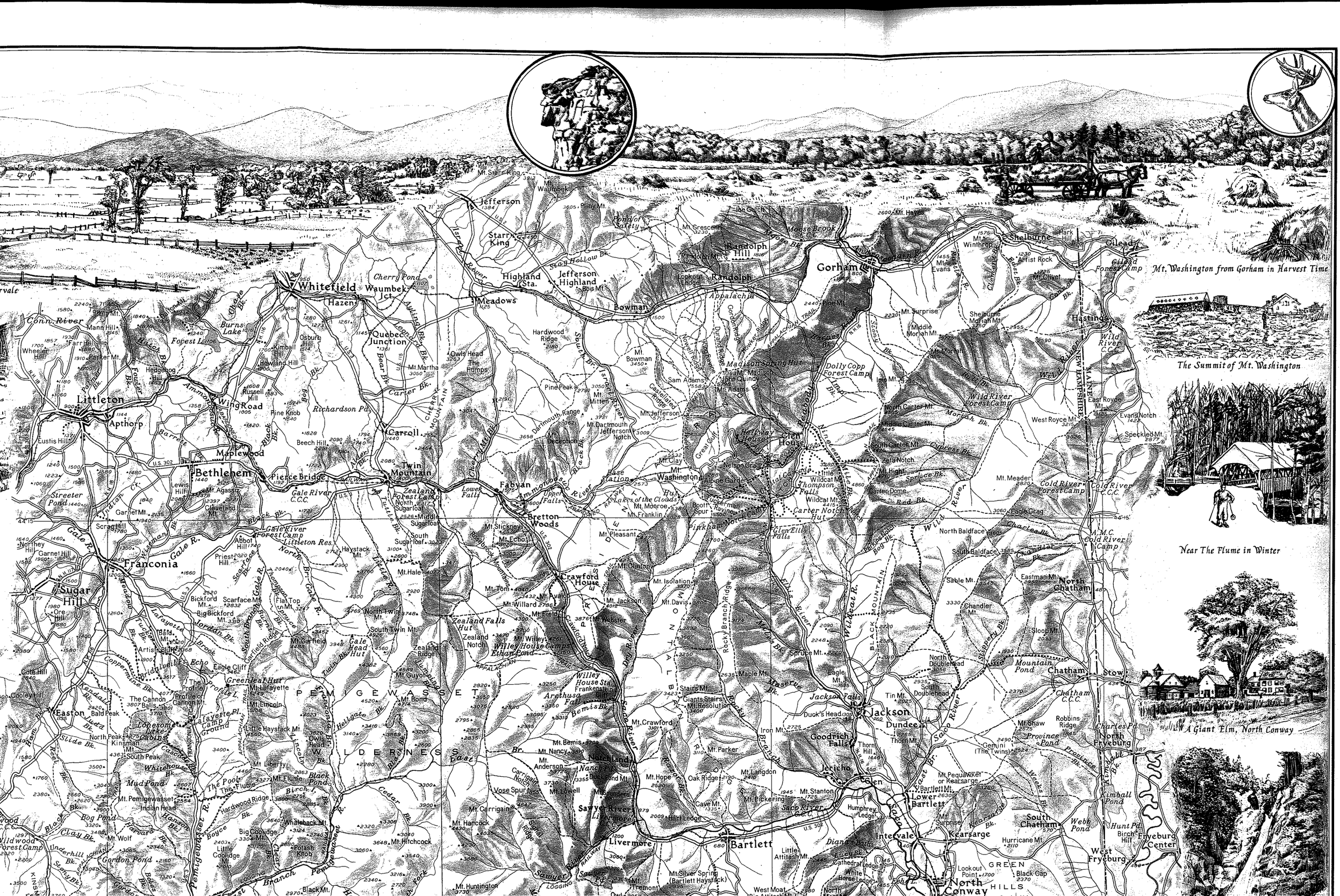
Because of the filter that was placed in front of the camera lens and the particular type of infra-red-sensitive film used, no visible light acted on the film, and the photograph resulted wholly from light that the eye could not see.

RELIEF AND AERIAL MAPS

Aerial maps, whether actual photograps, drawings, or photographs of models give a birds-eye view of buildings, roads, trees, mountains, cities, etc. Relief maps are best known for their use in showing elevations and surface undulations of a country, but may be used effectively also in presenting statistical data.

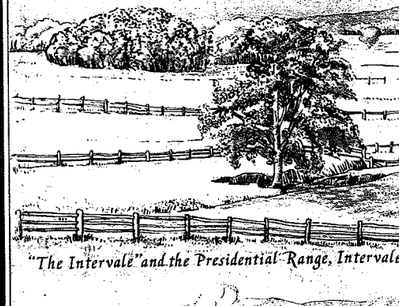





Mt. Starr King
Mt. Waumbek
Jefferson
Pliny Mt.
Bowl of Safety
Mt. Crescent
Ice Gulch
Mt. Hayes
Moose Brook C.C.C.
Starr King
Randolph Hill
Randolph Mt.
Stag Hollow Bk.
Israel River
Highland Sta.
Jefferson Highland
Bois Mt.
Lookout Lodge
Randolph
Gorham
Mt. Evans
Shelburne
Mt. Winthrop
Artist Rock
Mt. Olivet
Gilead
Gilead Forest Camp
Mt. Washington from Gorham in Harvest Time
Whitefield
Waumbek Jct.
Cherry Pond
Hazen
Meadows
Bowman
Appalachia
Pine Mt.
Mt. Surprise
Middle Moriah Mt.
Shelburne Moriah Mt.
Mt. Moriah
Hastings
Wild River C.C.C.
Conn. River
Mann Hill
Towing Mt.
Wheeler Hill
Farr Hill
Parker Mt.
Hedgehog Hill
Burns Lake
Forest Lodge
Kimball Hill
Osburn Hill
Howland Hill
Quebec Junction
Leonard Bk.
Ammonoosuc River
Owls Head
The Humps
Mt. Martha
Carter Bk.
Hardwood Ridge
Mt. Bowman
Sam Adams
Madison Spring Hut
Mt. Madison
John Quincy
Mt. Adams
Dolly Copp Forest Camp
Imp Mt.
Wild River Forest Camp
Moriah Bk.
Littleton
Wing Road
Russell Hill
Pine Knob
Richardson Pd.
Apthorp
Eustis Hills
Maplewood
Bethlehem
Pierce Bridge
Lewis Hill
Mt. Agassiz
Cleveland Mt.
Garnet Mt.
Scrag Hill
Gale River C.C.C.
Gale River Forest Camp
Littleton Res.
Streeter Pond
Indian Cr.
Carroll
Twin Mountain
Zealand Forest Camp
Sugarloaf
Middle Sugarloaf
South Sugarloaf
Fabyan
Lower Falls
Upper Falls
Ammonoosuc River
Base Station
Mt. Clay
Mt. Washington
Lakes of the Clouds
Mt. Monroe
Mt. Franklin
Booth Spur
Sherman
Davis Path
Huts
Carter Notch Hut
Glen House
Halfway House
Nelson Crag
Alpine Gardens
Glen Ellis Falls
Wildcat Mt.
Wildcat Mt. Thompson Falls
Carter Dome
Mt. Hight
Zeta Notch
South Carter Mt.
Middle Carter Mt.
North Carter Mt.
Mt. Meader
Cold River Forest Camp
Cold River C.C.C.
Eagle Crag
Red Bk.
Spruce Bk.
Cypress Bk.
Evans Notch
Speckled Mt.
East Royce Mt.
West Royce Mt.
Maine
New Hampshire
Wild River
Easton
Cooley Hill
Cote Hill
Bald Peak
Lonesome Lake Cabins
Kinsman Mt.
North Peak
South Peak
Franconia
Sugar Hill
Ore Hill
Bickford Mt.
Big Bickford Mt.
Scarface Mt.
Flat Top Mt.
Lafayette
Mt. Lafayette
Eagle Cliff
Greenleaf Hut
The Profile
Profile Cannon Mt.
The Cannon Balls
Mt. Lincoln
Little Haystack Mt.
Owls Head
Mt. Liberty
Mt. Flume
Mt. Pemigewasset
Indian Head
Mt. Bond
Mt. Guyot
Zealand Ridge
Zealand Notch
Zealand Falls Hut
Mt. Willey
Willey House Camp
Ethan Pond
Mt. Garfield
Garfield Ridge
Gale Head Hut
North Twin Mt.
South Twin Mt.
Mt. Carrigain
Signal Ridge
Mt. Hancock
Mt. Huntington
Black Mt.
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Deception
Mt. Stickney
Mt. Echo
Haystack Mt.
Mt. Hale
Mt. Tom
Mt. Willard
Mt. Field
Mt. Crawford
Mt. Bemis
Mt. Nancy
Mt. Anderson
Nancy Pd.
Duck Pond Mt.
Mt. Lowell
Vose Spur
Mt. Carrigain
Mt. Hancock
Mt. Hitchcock
Mt. Jefferson
Mt. Clinton
Mt. Isolation
Mt. Jackson
Mt. Davis
Mt. Webster
Crawford House
Willey House Sta.
Frankenstein
Arethusa Falls
Bemis Bk.
Stairs Mt.
Giants Stairs
Mt. Resolution
Mt. Langdon
Mt. Hope
Oak Ridge
Mt. Pickering
Mt. Stanton
Cave Mt.
Hart Ledge
Livermore
Bartlett
Intervale
Jackson
Dundee
Goodrich Falls
Duck's Head
Iron Mt.
Mt. Parker
Jericho
Glen
Thorn Mt.
Thorn Hill
Gemini (The Twins)
Mt. Pequawket or Kearsarge
Bartlett Mt.
Lower Bartlett
Kearsarge
Hurricane Mt.
South Chatham
Webb Pond
Hunt Pd.
Birch Hill
Fryeburg Center
West Fryeburg
North Fryeburg
Province Pond
Robbins Ridge
Charles Pd.
Kimball Pond
Evans Notch
Speckled Mt.
Shelburne
Gilead
Gilead Forest Camp
Mt. Washington from Gorham in Harvest Time
The Summit of Mt. Washington
Near The Flume in Winter
A Giant Elm, North Conway
Pemigewasset Wilderness
Presidential Range
Dartmouth Range
Mt. Jefferson Notch
Mt. Dartmouth
Mt. Pleasant
Mt. Deception
Mt. Jefferson
Mt. Clay
Mt. Washington
Mt. Monroe
Mt. Franklin
Mt. Pleasant
Mt. Clinton
Mt. Isolation
Mt. Jackson
Mt. Davis
Mt. Webster
Mt. Crawford
Mt. Resolution
Mt. Langdon
Mt. Hope
Mt. Pickering
Mt. Stanton
Mt. Parker
Mt. Bemis
Mt. Nancy
Mt. Anderson
Mt. Lowell
Mt. Carrigain
Mt. Hancock
Mt. Huntington
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Deception
Mt. Stickney
Mt. Echo
Mt. Tom
Mt. Willard
Mt. Field
Mt. Garfield
Mt. Lafayette
Mt. Bond
Mt. Guyot
Mt. Carrigain
Mt. Hancock
Mt. Hitchcock
Mt. Lincoln
Mt. Liberty
Mt. Flume
Mt. Pemigewasset
Mt. Wolf
Mt. Agassiz
Mt. Evans
Mt. Winthrop
Mt. Olivet
Mt. Surprise
Middle Moriah Mt.
Mt. Moriah
Imp Mt.
Mt. Meader
Mt. Hight
Zeta Notch
South Carter Mt.
Middle Carter Mt.
North Carter Mt.
Carter Dome
Wildcat Mt.
Wildcat Mt. Thompson Falls
Mt. Surprise
Kearsarge
Mt. Pequawket or Kearsarge
Bartlett Mt.
Lower Bartlett
Thorn Mt.
Thorn Hill
Gemini (The Twins)
Mt. Shaw
Robbins Ridge
Province Pond
Charles Pd.
North Fryeburg
Kimball Pond
Webb Pond
Hunt Pd.
Birch Hill
Fryeburg Center
West Fryeburg
Hurricane Mt.
South Chatham
Evans Notch
Speckled Mt.
Eastman Mt.
North Chatham
Chandler Mt.
Sloop Mt.
Mountain Pond
Chatham
Stow
Chatham C.C.C.
Sable Mt.
South Baldface
North Baldface
A.M.C. Cold River Camp
Eagle Mt.
North Doublehead
South Doublehead
Tin Mt.
Maple Mt.
Spruce Mt.
Rocky Branch Ridge
Black Mountain
Wildcat R.
Ellis River
Jackson Falls
Diana's Baths
Lucy Bk.
Cathedral Ledge
White Horse Ledge
Lookout Point
Black Cap
North Conway
Intervale
Humphrey Ledge
Mt. Surprise
Kearsarge
Hurricane Mt.
Little Attitash Mt.
Attitash Mt.
Mt. Meader
Cold River Forest Camp
Cold River C.C.C.
Eagle Crag
Red Bk.
Spruce Bk.
Cypress Bk.
Evans Notch
Speckled Mt.
East Royce Mt.
West Royce Mt.
Maine
New Hampshire
Wild River
Moriah Bk.
Wild River Forest Camp
Imp Mt.
Dolly Copp Forest Camp
Madison Spring Hut
Mt. Madison
John Quincy
Mt. Adams
Sam Adams
Mt. Bowman
Hardwood Ridge
Mower Ridge
Gordon Ridge
Durand Ridge
King Ravine
Appalachia
Pine Mt.
Bowman
Meadows
Jefferson Highland
Bois Mt.
Lookout Lodge
Randolph
Gorham
Moose Brook C.C.C.
Ice Gulch
Mt. Hayes
Mt. Crescent
Bowl of Safety
Pliny Mt.
Jefferson
Mt. Waumbek
Mt. Starr King
Israel River
Starr King
Randolph Hill
Randolph Mt.
Stag Hollow Bk.
Cherry Pond
Waumbek Jct.
Hazen
Whitefield
Conn. River
Mann Hill
Towing Mt.
Wheeler Hill
Farr Hill
Parker Mt.
Hedgehog Hill
Burns Lake
Forest Lodge
Kimball Hill
Osburn Hill
Howland Hill
Quebec Junction
Leonard Bk.
Ammonoosuc River
Owls Head
The Humps
Mt. Martha
Carter Bk.
Littleton
Wing Road
Russell Hill
Pine Knob
Richardson Pd.
Apthorp
Eustis Hills
Maplewood
Bethlehem
Pierce Bridge
Lewis Hill
Mt. Agassiz
Cleveland Mt.
Garnet Mt.
Scrag Hill
Gale River C.C.C.
Gale River Forest Camp
Littleton Res.
Streeter Pond
Indian Cr.
Carroll
Twin Mountain
Zealand Forest Camp
Sugarloaf
Middle Sugarloaf
South Sugarloaf
Fabyan
Lower Falls
Upper Falls
Ammonoosuc River
Base Station
Mt. Clay
Mt. Washington
Lakes of the Clouds
Mt. Monroe
Mt. Franklin
Booth Spur
Sherman
Davis Path
Huts
Carter Notch Hut
Glen House
Halfway House
Nelson Crag
Alpine Gardens
Glen Ellis Falls
Wildcat Mt.
Wildcat Mt. Thompson Falls
Carter Dome
Mt. Hight
Zeta Notch
South Carter Mt.
Middle Carter Mt.
North Carter Mt.
Mt. Meader
Cold River Forest Camp
Cold River C.C.C.
Eagle Crag
Red Bk.
Spruce Bk.
Cypress Bk.
Evans Notch
Speckled Mt.
East Royce Mt.
West Royce Mt.
Maine
New Hampshire
Wild River
Easton
Cooley Hill
Cote Hill
Bald Peak
Lonesome Lake Cabins
Kinsman Mt.
North Peak
South Peak
Franconia
Sugar Hill
Ore Hill
Bickford Mt.
Big Bickford Mt.
Scarface Mt.
Flat Top Mt.
Lafayette
Mt. Lafayette
Eagle Cliff
Greenleaf Hut
The Profile
Profile Cannon Mt.
The Cannon Balls
Mt. Lincoln
Little Haystack Mt.
Owls Head
Mt. Liberty
Mt. Flume
Mt. Pemigewasset
Indian Head
Mt. Bond
Mt. Guyot
Zealand Ridge
Zealand Notch
Zealand Falls Hut
Mt. Willey
Willey House Camp
Ethan Pond
Mt. Garfield
Garfield Ridge
Gale Head Hut
North Twin Mt.
South Twin Mt.
Mt. Carrigain
Signal Ridge
Mt. Hancock
Mt. Huntington
Black Mt.
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Deception
Mt. Stickney
Mt. Echo
Mt. Tom
Mt. Willard
Mt. Field
Mt. Crawford
Mt. Bemis
Mt. Nancy
Mt. Anderson
Nancy Pd.
Duck Pond Mt.
Mt. Lowell
Vose Spur
Mt. Carrigain
Mt. Hancock
Mt. Hitchcock
Mt. Jefferson
Mt. Clinton
Mt. Isolation
Mt. Jackson
Mt. Davis
Mt. Webster
Crawford House
Willey House Sta.
Frankenstein
Arethusa Falls
Bemis Bk.
Stairs Mt.
Giants Stairs
Mt. Resolution
Mt. Langdon
Mt. Hope
Oak Ridge
Mt. Pickering
Mt. Stanton
Cave Mt.
Hart Ledge
Livermore
Bartlett
Intervale
Jackson
Dundee
Goodrich Falls
Duck's Head
Iron Mt.
Mt. Parker
Jericho
Glen
Thorn Mt.
Thorn Hill
Gemini (The Twins)
Mt. Pequawket or Kearsarge
Bartlett Mt.
Lower Bartlett
Kearsarge
Hurricane Mt.
South Chatham
Webb Pond
Hunt Pd.
Birch Hill
Fryeburg Center
West Fryeburg
North Fryeburg
Province Pond
Robbins Ridge
Charles Pd.
Kimball Pond
Evans Notch
Speckled Mt.
Eastman Mt.
North Chatham
Chandler Mt.
Sloop Mt.
Mountain Pond
Chatham
Stow
Chatham C.C.C.
Sable Mt.
South Baldface
North Baldface
A.M.C. Cold River Camp
Eagle Mt.
North Doublehead
South Doublehead
Tin Mt.
Maple Mt.
Spruce Mt.
Rocky Branch Ridge
Black Mountain
Wildcat R.
Ellis River
Jackson Falls
Diana's Baths
Lucy Bk.
Cathedral Ledge
White Horse Ledge
Lookout Point
Black Gap
North Conway
Intervale
Humphrey Ledge
Mt. Surprise
Kearsarge
Hurricane Mt.
Little Attitash Mt.
Attitash Mt.
Mt. Meader
Cold River Forest Camp
Cold River C.C.C.
Eagle Crag
Red Bk.
Spruce Bk.
Cypress Bk.
Evans Notch
Speckled Mt.
East Royce Mt.
West Royce Mt.
Maine
New Hampshire
Wild River
Moriah Bk.
Wild River Forest Camp
Imp Mt.
Dolly Copp Forest Camp
Madison Spring Hut
Mt. Madison
John Quincy
Mt. Adams
Sam Adams
Mt. Bowman
Hardwood Ridge
Mower Ridge
Gordon Ridge
Durand Ridge
King Ravine
Appalachia
Pine Mt.
Bowman
Meadows
Jefferson Highland
Bois Mt.
Lookout Lodge
Randolph
Gorham
Moose Brook C.C.C.
Ice Gulch
Mt. Hayes
Mt. Crescent
Bowl of Safety
Pliny Mt.
Jefferson
Mt. Waumbek
Mt. Starr King
Israel River
Starr King
Randolph Hill
Randolph Mt.
Stag Hollow Bk.
Cherry Pond
Waumbek Jct.
Hazen
Whitefield
Conn. River
Mann Hill
Towing Mt.
Wheeler Hill
Farr Hill
Parker Mt.
Hedgehog Hill
Burns Lake
Forest Lodge
Kimball Hill
Osburn Hill
Howland Hill
Quebec Junction
Leonard Bk.
Ammonoosuc River
Owls Head
The Humps
Mt. Martha
Carter Bk.
Littleton
Wing Road
Russell Hill
Pine Knob
Richardson Pd.
Apthorp
Eustis Hills
Maplewood
Bethlehem
Pierce Bridge
Lewis Hill
Mt. Agassiz
Cleveland Mt.
Garnet Mt.
Scrag Hill
Gale River C.C.C.
Gale River Forest Camp
Littleton Res.
Streeter Pond
Indian Cr.
Carroll
Twin Mountain
Zealand Forest Camp
Sugarloaf
Middle Sugarloaf
South Sugarloaf
Fabyan
Lower Falls
Upper Falls
Ammonoosuc River
Base Station
Mt. Clay
Mt. Washington
Lakes of the Clouds
Mt. Monroe
Mt. Franklin
Booth Spur
Sherman
Davis Path
Huts
Carter Notch Hut
Glen House
Halfway House
Nelson Crag
Alpine Gardens
Glen Ellis Falls
Wildcat Mt.
Wildcat Mt. Thompson Falls
Carter Dome
Mt. Hight
Zeta Notch
South Carter Mt.
Middle Carter Mt.
North Carter Mt.
Mt. Meader
Cold River Forest Camp
Cold River C.C.C.
Eagle Crag
Red Bk.
Spruce Bk.
Cypress Bk.
Evans Notch
Speckled Mt.
East Royce Mt.
West Royce Mt.
Maine
New Hampshire
Wild River
Easton
Cooley Hill
Cote Hill
Bald Peak
Lonesome Lake Cabins
Kinsman Mt.
North Peak
South Peak
Franconia
Sugar Hill
Ore Hill
Bickford Mt.
Big Bickford Mt.
Scarface Mt.
Flat Top Mt.
Lafayette
Mt. Lafayette
Eagle Cliff
Greenleaf Hut
The Profile
Profile Cannon Mt.
The Cannon Balls
Mt. Lincoln
Little Haystack Mt.
Owls Head
Mt. Liberty
Mt. Flume
Mt. Pemigewasset
Indian Head
Mt. Bond
Mt. Guyot
Zealand Ridge
Zealand Notch
Zealand Falls Hut
Mt. Willey
Willey House Camp
Ethan Pond
Mt. Garfield
Garfield Ridge
Gale Head Hut
North Twin Mt.
South Twin Mt.
Mt. Carrigain
Signal Ridge
Mt. Hancock
Mt. Huntington
Black Mt.
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Deception
Mt. Stickney
Mt. Echo
Mt. Tom
Mt. Willard
Mt. Field
Mt. Crawford
Mt. Bemis
Mt. Nancy
Mt. Anderson
Nancy Pd.
Duck Pond Mt.
Mt. Lowell
Vose Spur
Mt. Carrigain
Mt. Hancock
Mt. Hitchcock
Mt. Jefferson
Mt. Clinton
Mt. Isolation
Mt. Jackson
Mt. Davis
Mt. Webster
Crawford House
Willey House Sta.
Frankenstein
Arethusa Falls
Bemis Bk.
Stairs Mt.
Giants Stairs
Mt. Resolution
Mt. Langdon
Mt. Hope
Oak Ridge
Mt. Pickering
Mt. Stanton
Cave Mt.
Hart Ledge
Livermore
Bartlett
Intervale
Jackson
Dundee
Goodrich Falls
Duck's Head
Iron Mt.
Mt. Parker
Jericho
Glen
Thorn Mt.
Thorn Hill
Gemini (The Twins)
Mt. Pequawket or Kearsarge
Bartlett Mt.
Lower Bartlett
Kearsarge
Hurricane Mt.
South Chatham
Webb Pond
Hunt Pd.
Birch Hill
Fryeburg Center
West Fryeburg
North Fryeburg
Province Pond
Robbins Ridge
Charles Pd.
Kimball Pond
Evans Notch
Speckled Mt.
Eastman Mt.
North Chatham
Chandler Mt.
Sloop Mt.
Mountain Pond
Chatham
Stow
Chatham C.C.C.
Sable Mt.
South Baldface
North Baldface
A.M.C. Cold River Camp
Eagle Mt.
North Doublehead
South Doublehead
Tin Mt.
Maple Mt.
Spruce Mt.
Rocky Branch Ridge
Black Mountain
Wildcat R.
Ellis River
Jackson Falls
Diana's Baths
Lucy Bk.
Cathedral Ledge
White Horse Ledge
Lookout Point
Black Gap
North Conway
Intervale
Humphrey Ledge
Mt. Surprise
Kearsarge
Hurricane Mt.
Little Attitash Mt.
Attitash Mt.







"The Intervale" and the Presidential Range, Intervale

Mount Washington Railway

A.M.C. Ski Cabin

The Flume, Franconia Notch

Littleton
Apthorp
Eustis Hills
Wing Road
Maplewood
Bethlehem
Pierce Bridge
Gale River C.C.C.
Gale River Forest Camp
Lewis Hill
Mt. Agassiz
Streeter Pond
Garnet Mt.
Scrag Hill
Northey Hill
Garnet Hill
Franconia
Sugar Hill
Ore Hill
Lafayette Camp Ground
Easton
Cooley Hill
Gale Hill
Bald Peak
Kinsman Mt.
South Peak
North Peak
Cascade Cabins
Loonsome Lake
Whitefield
Waumbek Jct.
Hazen
Cherry Pond
Meadows
Jefferson
Mt. Starr King
Mt. Waumbek
Pliny Mt.
Starr King
Jefferson Highland
Highland Sta.
Randolph Hill
Randolph
Bowman
Quebec Junction
Carroll
Twin Mountain
Zealand Forest Camp
North Sugarloaf
South Sugarloaf
Fabyan
Bretton Woods
Crawford House
Willey House Sta.
Willey House Camps
Ethan Pond
Zealand Falls Hut
Zealand Notch
Mt. Willey
Mt. Field
Mt. Tom
Mt. Avalon
Mt. Willard
Mt. Jackson
Mt. Davis
Mt. Webster
Mt. Isolation
Mt. Clinton
Mt. Pleasant
Mt. Hale
Mt. Guyot
Mt. Bond
Mt. Lafayette
Mt. Lincoln
Little Haystack Mt.
Mt. Liberty
Mt. Flume
Mt. Pemigewasset
Indian Head
Mt. Wolf
Whaleback Mt.
Mt. Hitchcock
Big Coolidge Mt.
Little Coolidge Mt.
Potash Knob
Black Mt.
Mt. Huntington
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Carrigain
Mt. Hancock
Mt. Anderson
Mt. Nancy
Mt. Bemis
Mt. Crawford
Mt. Parker
Mt. Hope
Mt. Langdon
Mt. Stanton
Mt. Lowell
Oak Ridge
Cave Mt.
Carrigain Notch
Vose Spur
Nancy Pond
Bemis Pond
Arethusa Falls
Giants Stairs
Mt. Resolution
Duck's Head
Iron Mt.
Goodrich Falls
Thorn Mt.
Thorn Hill
Livermore
Bartlett
Intervale
Hart Ledge
Humphrey Ledge
Cathedral Ledge
Diana's Bath
Little Attitash Mt.
Attitash Mt.
West Moat (Big Attitash Mt.)
North Moat
Peaked Mt.
Lookout Point
Black Cap
North Conway
Gorham
Shelburne
Winthrop
Mt. Evans
Hark Hill
Gilead
Gilead Forest Camp
Mt. Crescent
Randolph Mt.
Lookout Ridge
Moose Brook C.C.C.
Ice Gulch
Mt. Hayes
Appalachia
Pine Mt.
Mt. Surprise
Middle Moriah Mt.
Shelburne Moriah Mt.
Hastings
Wild River C.C.C.
Mt. Moriah
Imp Mt.
Dolly Copp Forest Camp
Madison Spring Hut
Mt. Madison
John Quincy Mt.
Mt. Adams
Sam Adams
Hayes Copp Ridge
Durand Ridge
Gorham Mt.
Hardwood Ridge
Owls Head
The Humps
Mt. Bowman
Mt. Martha
Mt. Mitten
Pine Peak
Mt. Jefferson
Mt. Dartmouth Jefferson Notch
Mt. Deception
Dartmouth Range
Castellated Ridge
Mt. Clay
Mt. Washington
Alpine Garden
Nelson Crag
Tuckerman Ravine
Hermit Lake
Huntington Ravine
Boott Spur
Sherman
Mt. Monroe
Mt. Franklin
Lakes of the Clouds Hut
Wildcat Mt.
Wildcat Ridge
Carter Notch Hut
Carter Dome
Carter Mt.
Middle Carter Mt.
North Carter Mt.
Wild River Forest Camp
Eagle Crag
Mt. Meader
Cold River Forest Camp
Cold River C.C.C.
A.M.C. Cold River Camp
West Royce Mt.
East Royce Mt.
Evans Notch
Speckled Mt.
Royce Mt.
Glen House
Glen Ellis Falls
Pinkham Notch
Wildcat Mt. Thompson Falls
Ellis River
Rocky Branch Ridge
North Baldface
South Baldface
Eastman Mt.
North Chatham
Sable Mt.
Chandler Mt.
Sloop Mt.
Mountain Pond
Chatham
Stow
Chatham C.C.C.
North Doublehead
South Doublehead
Tin Mt.
Eagle Mt.
Maple Mt.
Sprucie Mt.
Jackson
Dundee
Mt. Shaw
Robbins Ridge
Province Pond
Charles Pd.
North Fryeburg
Gemini (The Twins)
Mt. Pequawket or Kearsarge
Lower Bartlett
Kearsarge
South Chatham
Webb Pond
Hunt Pd.
Birch Hill
Fryeburg Center
West Fryeburg
Hurricane Mt.
Intervale
Saco River
Swift River
Wild River
Ellis River
Wildcat River
Peabody River
Androscoggin River
Conn. River
Ammonoosenuc River
Israel River
Dead River
Clear Stream
Moose Brook
Gale River
Lafayette Brook
Franconia Brook
Cherry Mt.
Mt. Agassiz
Mt. Echo
Mt. Pleasant
Mt. Clinton
Mt. Isolation
Mt. Davis
Mt. Webster
Mt. Jackson
Mt. Willard
Mt. Field
Mt. Avalon
Mt. Tom
Mt. Crawford
Mt. Parker
Mt. Bemis
Mt. Nancy
Mt. Anderson
Mt. Hope
Mt. Langdon
Mt. Stanton
Mt. Lowell
Mt. Carrigain
Mt. Hancock
Mt. Huntington
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Bond
Mt. Guyot
Mt. Lafayette
Mt. Lincoln
Little Haystack Mt.
Mt. Liberty
Mt. Flume
Mt. Pemigewasset
Indian Head
Mt. Wolf
Whaleback Mt.
Mt. Hitchcock
Big Coolidge Mt.
Little Coolidge Mt.
Potash Knob
Black Mt.
Mt. Huntington
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Carrigain
Mt. Hancock
Mt. Anderson
Mt. Nancy
Mt. Bemis
Mt. Crawford
Mt. Parker
Mt. Hope
Mt. Langdon
Mt. Stanton
Mt. Lowell
Oak Ridge
Cave Mt.
Carrigain Notch
Vose Spur
Nancy Pond
Bemis Pond
Arethusa Falls
Giants Stairs
Mt. Resolution
Duck's Head
Iron Mt.
Goodrich Falls
Thorn Mt.
Thorn Hill
Livermore
Bartlett
Intervale
Hart Ledge
Humphrey Ledge
Cathedral Ledge
Diana's Bath
Little Attitash Mt.
Attitash Mt.
West Moat (Big Attitash Mt.)
North Moat
Peaked Mt.
Lookout Point
Black Cap
North Conway
Gorham
Shelburne
Winthrop
Mt. Evans
Hark Hill
Gilead
Gilead Forest Camp
Mt. Crescent
Randolph Mt.
Lookout Ridge
Moose Brook C.C.C.
Ice Gulch
Mt. Hayes
Appalachia
Pine Mt.
Mt. Surprise
Middle Moriah Mt.
Shelburne Moriah Mt.
Hastings
Wild River C.C.C.
Mt. Moriah
Imp Mt.
Dolly Copp Forest Camp
Madison Spring Hut
Mt. Madison
John Quincy Mt.
Mt. Adams
Sam Adams
Hayes Copp Ridge
Durand Ridge
Gorham Mt.
Hardwood Ridge
Owls Head
The Humps
Mt. Bowman
Mt. Martha
Mt. Mitten
Pine Peak
Mt. Jefferson
Mt. Dartmouth Jefferson Notch
Mt. Deception
Dartmouth Range
Castellated Ridge
Mt. Clay
Mt. Washington
Alpine Garden
Nelson Crag
Tuckerman Ravine
Hermit Lake
Huntington Ravine
Boott Spur
Sherman
Mt. Monroe
Mt. Franklin
Lakes of the Clouds Hut
Wildcat Mt.
Wildcat Ridge
Carter Notch Hut
Carter Dome
Carter Mt.
Middle Carter Mt.
North Carter Mt.
Wild River Forest Camp
Eagle Crag
Mt. Meader
Cold River Forest Camp
Cold River C.C.C.
A.M.C. Cold River Camp
West Royce Mt.
East Royce Mt.
Evans Notch
Speckled Mt.
Royce Mt.
Glen House
Glen Ellis Falls
Pinkham Notch
Wildcat Mt. Thompson Falls
Ellis River
Rocky Branch Ridge
North Baldface
South Baldface
Eastman Mt.
North Chatham
Sable Mt.
Chandler Mt.
Sloop Mt.
Mountain Pond
Chatham
Stow
Chatham C.C.C.
North Doublehead
South Doublehead
Tin Mt.
Eagle Mt.
Maple Mt.
Sprucie Mt.
Jackson
Dundee
Mt. Shaw
Robbins Ridge
Province Pond
Charles Pd.
North Fryeburg
Gemini (The Twins)
Mt. Pequawket or Kearsarge
Lower Bartlett
Kearsarge
South Chatham
Webb Pond
Hunt Pd.
Birch Hill
Fryeburg Center
West Fryeburg
Hurricane Mt.
Intervale
Saco River
Swift River
Wild River
Ellis River
Wildcat River
Peabody River
Androscoggin River
Conn. River
Ammonoosenuc River
Israel River
Dead River
Clear Stream
Moose Brook
Gale River
Lafayette Brook
Franconia Brook
Cherry Mt.
Mt. Agassiz
Mt. Echo
Mt. Pleasant
Mt. Clinton
Mt. Isolation
Mt. Davis
Mt. Webster
Mt. Jackson
Mt. Willard
Mt. Field
Mt. Avalon
Mt. Tom
Mt. Crawford
Mt. Parker
Mt. Bemis
Mt. Nancy
Mt. Anderson
Mt. Hope
Mt. Langdon
Mt. Stanton
Mt. Lowell
Mt. Carrigain
Mt. Hancock
Mt. Huntington
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Bond
Mt. Guyot
Mt. Lafayette
Mt. Lincoln
Little Haystack Mt.
Mt. Liberty
Mt. Flume
Mt. Pemigewasset
Indian Head
Mt. Wolf
Whaleback Mt.
Mt. Hitchcock
Big Coolidge Mt.
Little Coolidge Mt.
Potash Knob
Black Mt.
Mt. Huntington
Mt. Tremont
Mt. Silver Spring (Bartlett Haystack)
Mt. Carrigain
Mt. Hancock
Mt. Anderson
Mt. Nancy
Mt. Bemis
Mt. Crawford
Mt. Parker
Mt. Hope
Mt. Langdon
Mt. Stanton
Mt. Lowell
Oak Ridge
Cave Mt.
Carrigain Notch
Vose Spur
Nancy Pond
Bemis Pond
Arethusa Falls
Giants Stairs
Mt. Resolution
Duck's Head
Iron Mt.
Goodrich Falls
Thorn Mt.
Thorn Hill
Livermore
Bartlett
Intervale
Hart Ledge
Humphrey Ledge
Cathedral Ledge
Diana's Bath
Little Attitash Mt.
Attitash Mt.
West Moat (Big Attitash Mt.)
North Moat
Peaked Mt.
Lookout Point
Black Cap
North Conway
PEMIGEWASSET WILDERNESS
WHITE MOUNTAIN NATIONAL FOREST
GREEN HILLS

THE WHITE MOUNTAINS
OF NEW HAMPSHIRE

Done in the studios of The National Geographic Society for

The National Geographic Magazine

GILBERT GROSVENOR, EDITOR

0 5 10
STATUTE MILES

Foot Trails ----- *Ski Trails* ····· *Waterfalls* —⊢ *Fire Lookouts* ⊛ *Summits* ▲
Elevations, in Feet 6288 *Main Highways* ═══ *Other Highways* ═══ *Landing Fields* ✈

Albert H. Bumstead, Chief Cartographer — *Sketches by Margaret B. Austin*

WASHINGTON, D.C. JULY 1937

Canada
Area covered by the map
Maine
Mt. Washington
Vermont
Portland
L. Winnipesaukee
Concord
Connecticut River
White Mts.
Mass.
Boston
0 50 100
STATUTE MILES

Near The Flume in Winter

A Giant Elm, North Conway

Glen Ellis Falls, Pinkham Notch

Hikers on Mount Carrigain

Chocorua, Lake and Mountain

Mt. Conway

Copp Forest Camp

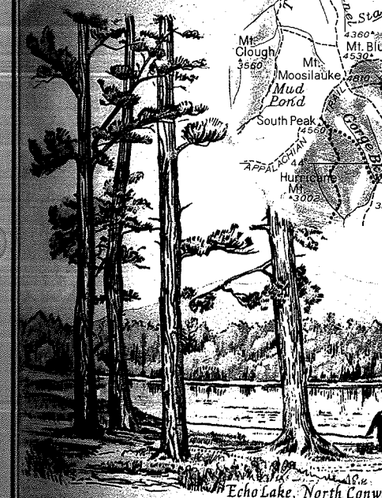
PRINTED BY A. HOEN & CO. BALTIMORE MD.



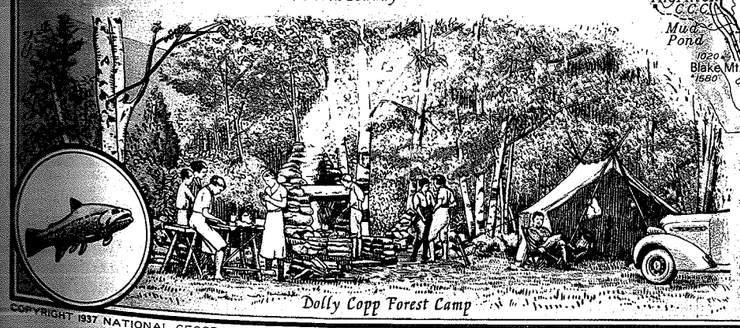
A.M.C. Ski Cabin



The Flume, Franconia Notch



Echo Lake, North Conway



Dolly Copp Forest Camp

THE WHITE MOUNTAINS
OF NEW HAMPSHIRE

Done in the studios of The National Geographic Society for

The National Geographic Magazine

GILBERT GROSVENOR, EDITOR

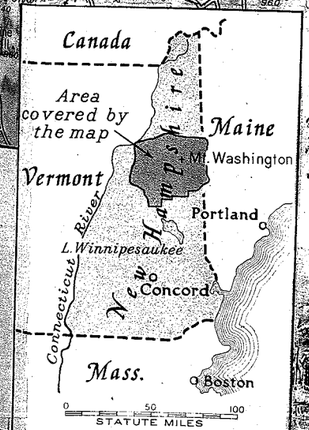
STATUTE MILES

Foot Trails ----- *Ski Trails* ..... *Waterfalls* ⊬ *Fire Lookouts* ⊙ *Summits* ▲

Elevations, in Feet 2285 *Main Highways* ═══ *Other Highways* ═══ *Landing Fields* ✈

Albert H. Bumstead, Chief Cartographer *Sketches by Margaret B. Austin*

WASHINGTON, D.C. JULY 1937

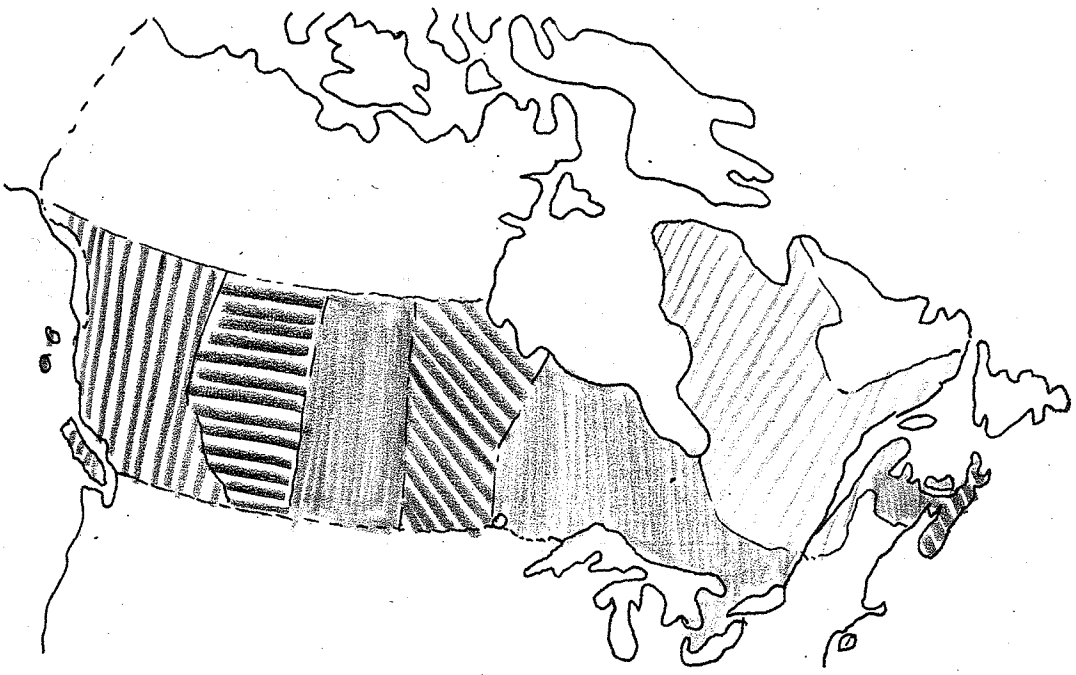




COPYRIGHT 1937 NATIONAL GEOGRAPHIC SOCIETY

CROSSHATCHED AND COLORED MAPS

The variety of cross hatchings available and the use of several colors are great aids in making statistical maps. Cross hatched and colored maps are especially adaptable to the presentation of frequency distribution data. For suggestions relative to the use of gradations of cross hatchings and colors, see "Suggestions for Making a Chart".

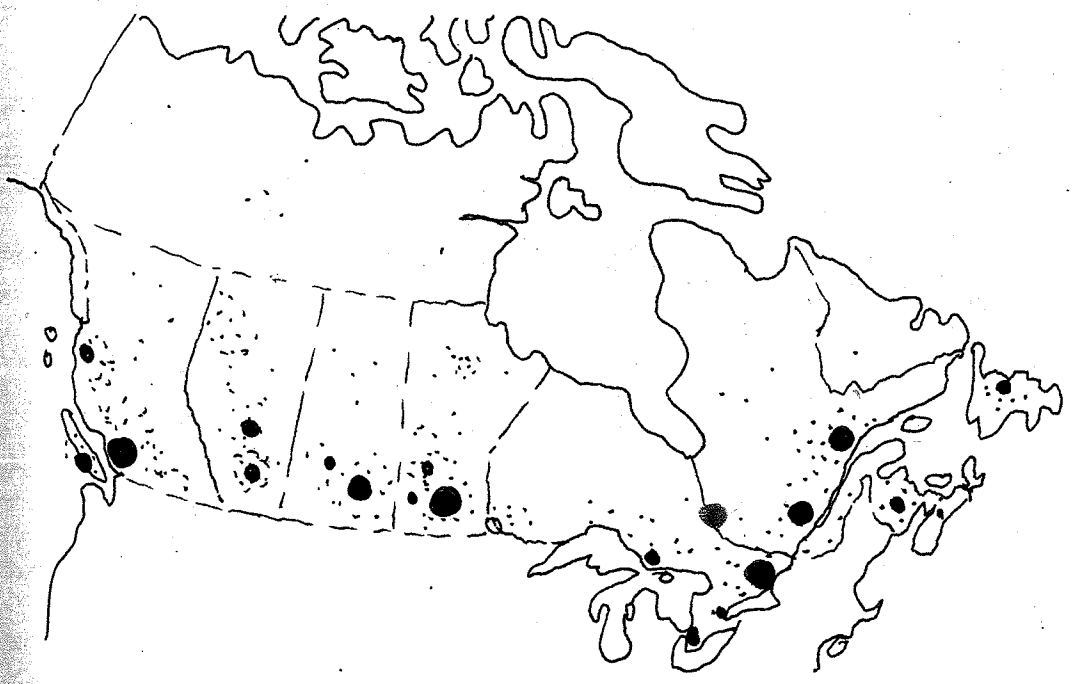


COST OF AUTO LICENCES

DOT AND PIN MAPS

One well known use of dot and pin maps is to present geographic distribution data. In this form, the dots or pins represent numerical values and effectively show geographic location. The placing of the dots is an important item. If the exact geographic distribution of data is known, the placing of the dots is no problem. However, when the data is in the form of general geographic distribution, such as data for an entire state, the dots are distributed throughout the whole state although one section may have contributed the total amount.

A very effective method of using beads is to string them either on a long pin or on a drill rod of small diameter, and then place them upright on the map. Beads on pins have been used very effectively on a map showing intended civic improvements. Red beads indicate assessed valuations on buildings, while green represented assessed valuations on land. Each bead represented a certain number of dollars and each pin represented an individual property. The wide adaptability of this material is evident.

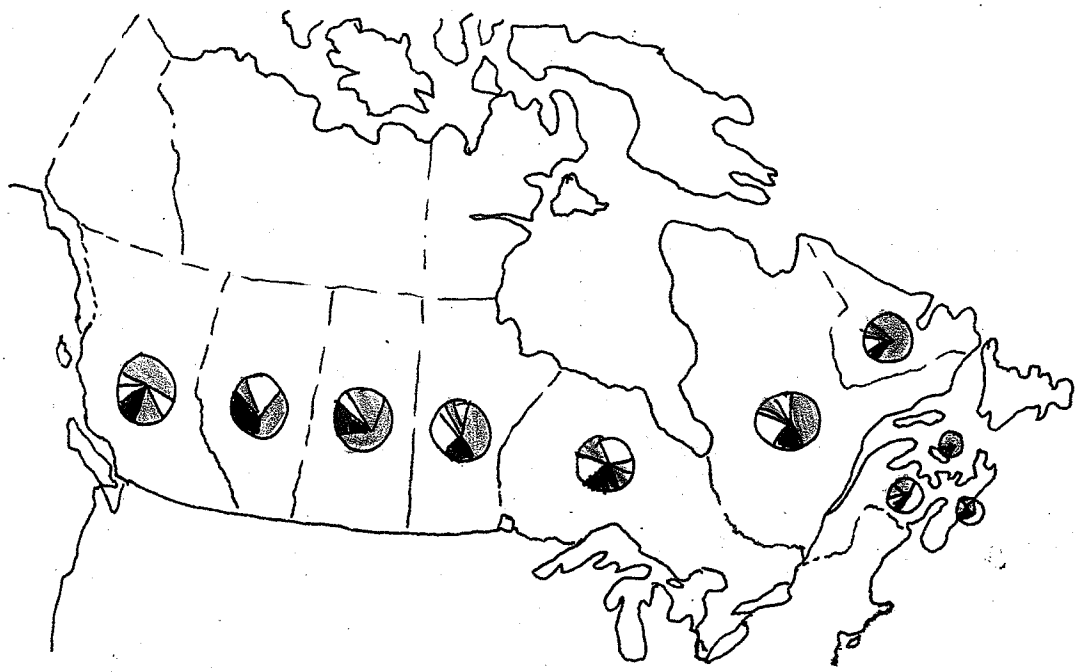


MAPS WITH CIRCLES AND SECTOR CHARTS

The chief advantage of placing circles and sector charts on maps is that the geographic location of the information is given. The general rules for sector charts may be followed here also.

1. A white line separating overlapping circles prevents any confusion.
2. Actual amounts and percentages for each geographic division should be given.

Since it is difficult to determine the relative areas of circles, a very clear and concise scale should be given. The following two methods give the measurement of the diameters which would correspond to given area representations.



MAPS WITH BAR CHARTS

Bars superimposed on a map allow a great many comparisons not possible with one cross hatched map. Time-series bars may be placed on a map. A comparison of several items rather than the presentation of just one item may be obtained. The practices commended in the chapters on bar charts should be adhered to when bars are placed on the map.



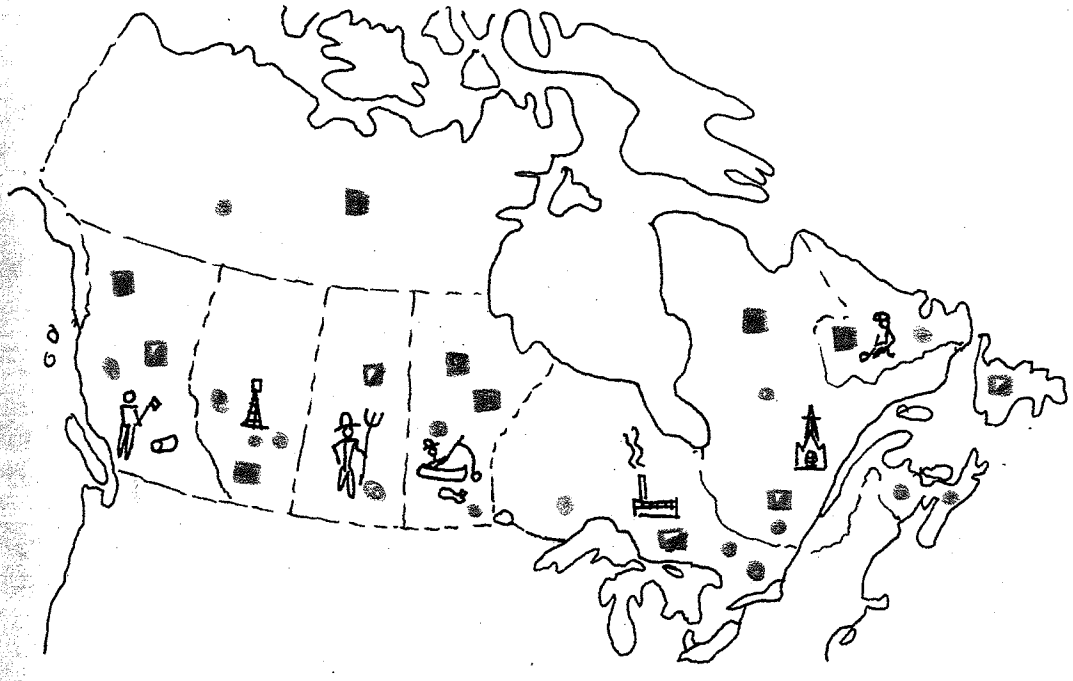
MAPS WITH CURVE CHARTS

Although curve charts have not been discussed up to this point, maps with curve chatts are included here to keep the map section in tact. Other maps may show rainfall for example, but these maps show the actual amount of precipitation.



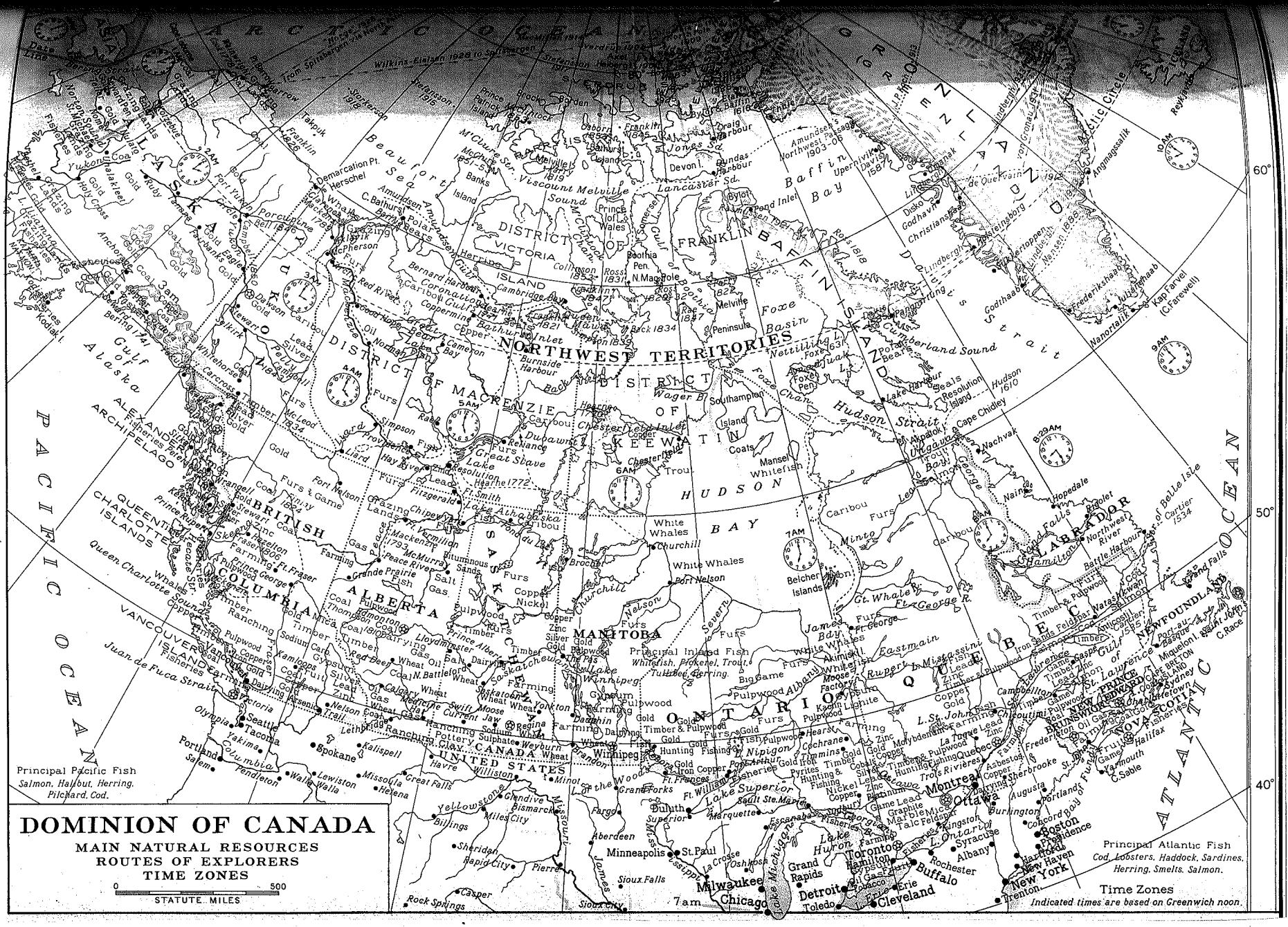
MAPS WITH SYMBOLS

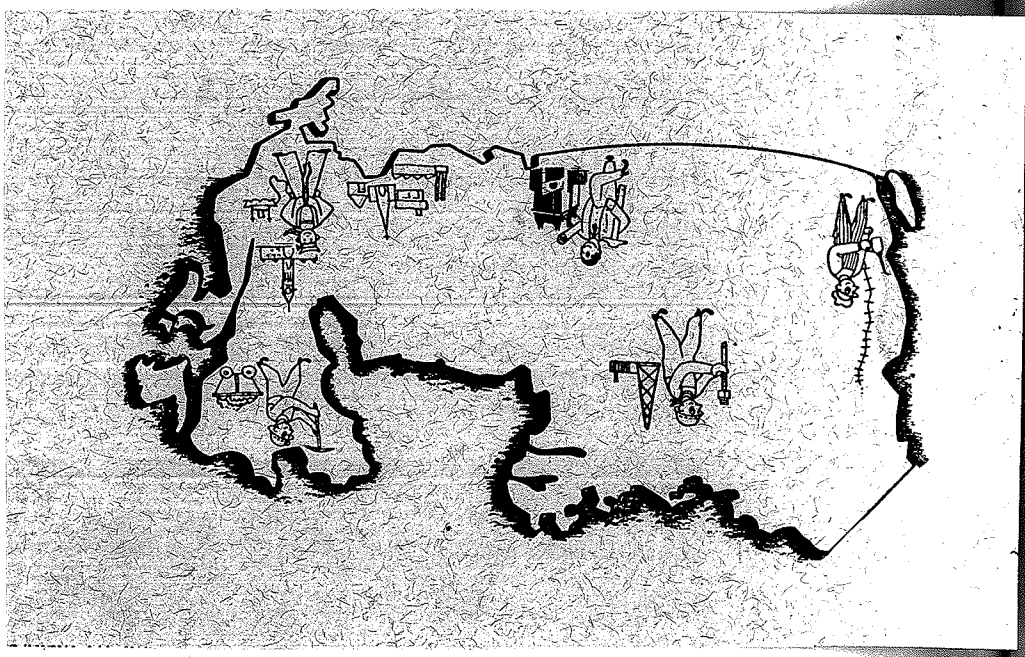
Quantitative material may be presented in the form of symbols by increasing the number of symbols as in pictorial unit bar charts. A variation in the type of symbol may also indicate a quantitative difference.

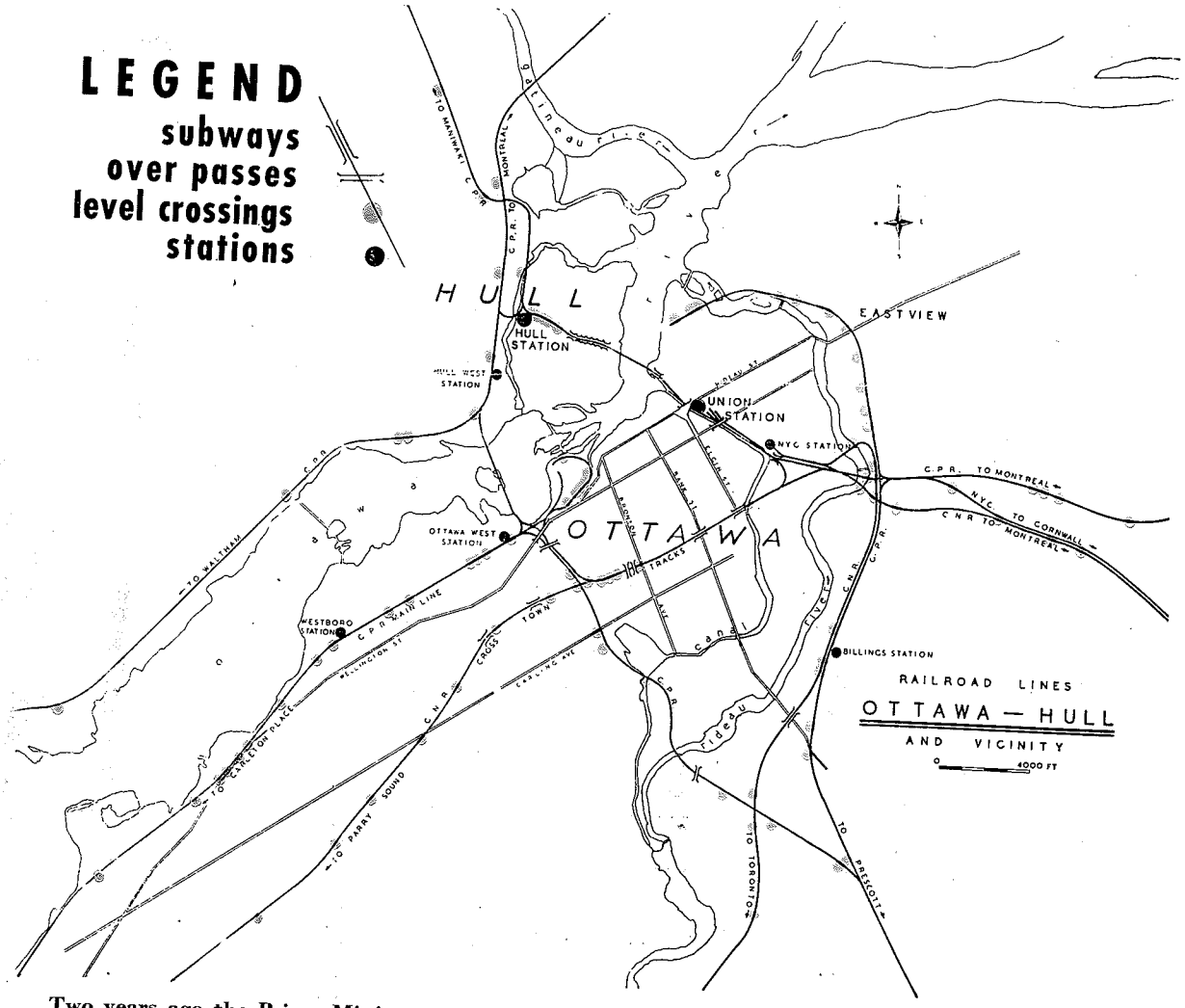


SYMBOL SUGGESTIONS




DOMINION OF CANADA
MAIN NATURAL RESOURCES
ROUTES OF EXPLORERS
TIME ZONES
0 500
STATUTE MILES
Principal Pacific Fish
Salmon, Halibut, Herring, Pilchard, Cod.
Principal Atlantic Fish
Cod, Lobsters, Haddock, Sardines, Herring, Smelts, Salmon.
Time Zones
Indicated times are based on Greenwich noon.
ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
ALASKA
NORTHWEST TERRITORIES
DISTRICT OF MACKENZIE
KEEWATIN
FRANKLIN
BAFFIN LAND
LABRADOR
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
NEWFOUNDLAND
NOVA SCOTIA
PRINCE EDWARD ISLAND
NEW BRUNSWICK
UNITED STATES
CANADA
HUDSON BAY
Beaufort Sea
Gulf of Alaska
Hudson Strait
Davis Strait
Baffin Bay
Lancaster Sd.
Jones Sd.
Viscount Melville Sound
Prince of Wales Strait
Foxe Basin
Foxe Chan.
Wager B.
Chesterfield Inlet
Queen Charlotte Islands
Vancouver Island
Juan de Fuca Strait
Alexander Archipelago
Great Slave Lake
Great Bear Lake
Lake Athabaska
Lake Winnipeg
Lake Superior
Lake Michigan
Lake Huron
L. Ontario
Gulf of St. Lawrence
Anticosti
Belle Isle
Cape Breton
Prince Edward Island
Arctic Circle
60°
50°
40°
Seattle
Tacoma
Portland
Spokane
Victoria
Vancouver
Calgary
Edmonton
Regina
Winnipeg
Duluth
Minneapolis
Milwaukee
Chicago
Detroit
Cleveland
Buffalo
Toronto
Hamilton
Rochester
Albany
Boston
New York
Montreal
Ottawa
Quebec
Sydney
Halifax
St. John
Fredericton
Charlottetown
Yellowknife
Whitehorse
Dawson
Fairbanks
Nome
Juneau
Prudhoe Bay
Point Barrow
Resolute
Churchill
Thule
Godthaab
Frobisher Bay
Nain
Goose Bay
Labrador City
Gander
St. John's
Argentia
Stephenville
Port aux Basques
Corner Brook
Grand Falls
Bonavista
Twillingate
Lewisporte
Botwood
Harbour Grace
Carbonear
Placentia
Marystown
Burgeo
Channel
Port-au-Port
Rocky Harbour
Gros Morne
Gander Lake
Terra Nova
Red Indian Lake
Grand Lake
Lake Melville
Hopedale
Okak
Hebron
Port Burwell
Port Stanley
Kingston
Peterborough
Belleville
Cobourg
Oshawa
Whitby
Niagara Falls
Welland
St. Catharines
Hamilton
Brantford
Stratford
Kitchener
Guelph
Owen Sound
Collingwood
Barrie
Orillia
Midland
Parry Sound
Sault Ste. Marie
Timmins
Cochrane
Kapuskasing
Hearst
Kirkland Lake
North Bay
Pembroke
Cornwall
Brockville
Perth
Smiths Falls
Carleton Place
Arnprior
Renfrew
Deep River
Chalk River
Petawawa
Pembroke
Mattawa
Sudbury
Copper Cliff
Espanola
Little Current
Manitoulin Island
Killarney
Parry Sound
Huntsville
Bracebridge
Gravenhurst
Muskoka Lakes
Lake of Bays
Algonquin Park
Haliburton
Minden
Bancroft
Madoc
Trenton
Belleville
Picton
Prince Edward Co.
Napanee
Gananoque
Brockville
Morrisburg
Cornwall
Alexandria
Hawkesbury
Lachute
St. Jerome
Ste. Agathe
Ste. Adele
Ste. Jovite
Mont Laurier
Maniwaki
Gatineau
Hull
Aylmer
Shawville
Pembroke
Arnprior
Carleton Place
Almonte
Perth
Smiths Falls
Brockville
Prescott
Ogdensburg
Massena
Malone
Plattsburgh
Burlington
Rutland
Bennington
Brattleboro
Keene
Nashua
Manchester
Concord
Portland
Augusta
Bangor
Calais
St. Stephen
St. John
Fredericton
Moncton
Sackville
Amherst
Truro
Halifax
Yarmouth
C. Sable
Sydney
Glace Bay
New Glasgow
Pictou
Antigonish
Charlottetown
Summerside
Tignish
Souris
Georgetown
Montague
Murray Harbour
Port Hawkesbury
Canso
Guysborough
Port Hood
Inverness
Mabou
Whycocomagh
Baddeck
Ingonish
Cheticamp
Margaree Harbour
Port aux Basques
Channel
Burgeo
Ramea
Grand Bruit
Rose Blanche
Francois
Lamaline
Fortune
St. Pierre
Miquelon
Cape Race
Cape Pine
Trepassey
Ferryland
Bay Bulls
Witless Bay
Petty Harbour
Torbay
Flatrock
Pouch Cove
Portugal Cove
Conception Bay South
Harbour Main
Holyrood
Avondale
Brigus
Cupids
Clarenville
Bonavista
Catalina
Port Union
Elliston
Trinity
Bay de Verde
Carbonear
Harbour Grace
Victoria
Whitbourne
Markland
Come by Chance
Arnold's Cove
Placentia
Argentia
Marystown
Burin
Grand Bank
Fortune
St. Lawrence
Lamaline
Burgeo
Ramea
Grand Bruit
Rose Blanche
Stephenville
Port aux Basques
Corner Brook
Deer Lake
Grand Falls
Bonavista
Twillingate
Lewisporte
Botwood
Gander
Gander Lake
Terra Nova
Red Indian Lake
Grand Lake
Lake Melville
Hopedale
Okak
Hebron
Nain
Goose Bay
Labrador City
Churchill
Thompson
Flin Flon
The Pas
Cranberry Portage
Swan River
Dauphin
Brandon
Portage la Prairie
Minnedosa
Virden
Melita
Estevan
Weyburn
Moose Jaw
Swift Current
Medicine Hat
Lethbridge
Red Deer
Drumheller
Camrose
Wetaskiwin
Ponoka
Lacombe
Innisfail
Olds
Didsbury
Airdrie
Cochrane
Canmore
Banff
Lake Louise
Jasper
Hinton
Edson
Whitecourt
Barrhead
Westlock
St. Albert
Fort Saskatchewan
Vegreville
Wainwright
Lloydminster
Battleford
North Battleford
Meadow Lake
Prince Albert
Melfort
Tisdale
Nipawin
Hudson Bay
Kamsack
Yorkton
Melville
Indian Head
Moosomin
Wapella
Carlyle
Estevan
Weyburn
Assiniboia
Gravelbourg
Maple Creek
Shaunavon
Swift Current
Kindersley
Rosetown
Biggar
Saskatoon
Wynyard
Watrous
Humboldt
Melfort
Tisdale
Nipawin
Hudson Bay
Flin Flon
The Pas
Thompson
Churchill
Gillam
Fort Severn
Sioux Lookout
Red Lake
Kenora
Fort Frances
Rainy River
Atikokan
Dryden
Ignace
Nakina
Geraldton
Longlac
Terrace Bay
Marathon
Wawa
Chapleau
Foleyet
Matheson
Iroquois Falls
Kapuskasing
Hearst
Cochrane
Timmins
Kirkland Lake
North Bay
Mattawa
Pembroke
Arnprior
Carleton Place
Almonte
Perth
Smiths Falls
Brockville
Prescott
Ogdensburg
Massena
Malone
Plattsburgh
Burlington
Rutland
Bennington
Brattleboro
Keene
Nashua
Manchester
Concord
Portland
Augusta
Bangor
Calais
St. Stephen
St. John
Fredericton
Moncton
Sackville
Amherst
Truro
Halifax
Yarmouth
C. Sable
Sydney
Glace Bay
New Glasgow
Pictou
Antigonish
Charlottetown
Summerside
Tignish
Souris
Georgetown
Montague
Murray Harbour
Port Hawkesbury
Canso
Guysborough
Port Hood
Inverness
Mabou
Whycocomagh
Baddeck
Ingonish
Cheticamp
Margaree Harbour

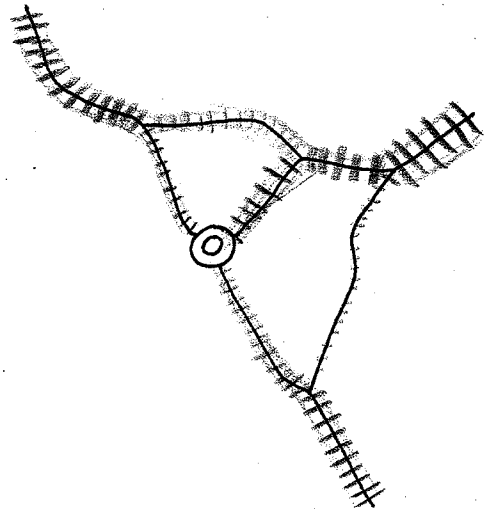


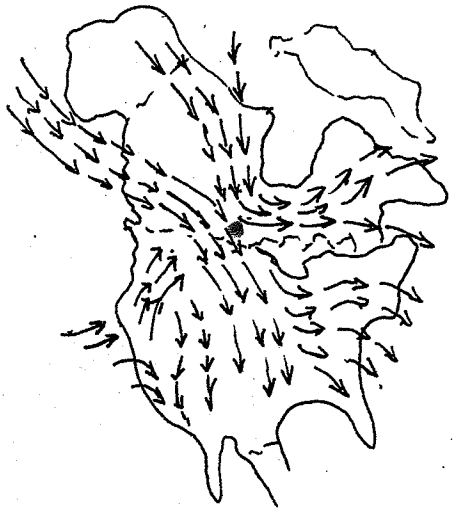


Two years ago the Prime Minister announced that rehabilitation of the Federal District would be the nation's tribute to the fallen in the war just ended. This map, from the initial report of the Committee, shows one of the bugbears to be tackled first: the network of railway trackage in the area. It is perhaps fitting that elimination of grade crossings should figure early in studies for the Capital. During the war years collisions between motor vehicles and trains resulted in the deaths of over 600 Canadians—a loss of Canadian life almost as great as that at *Dieppe*. (See also page 6 of this issue.)

FLOW MAPS

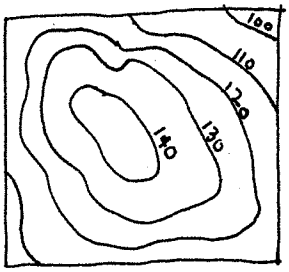
Flow maps may be used to show both qualitative and quantitative flow of goods, persons, automobiles, etc. When flow map is used to indicate the number of persons or automobiles on the streets and highways, it is generally called a traffic map. See the chapter on "flow charts".

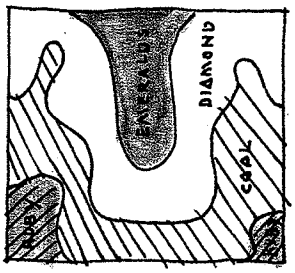


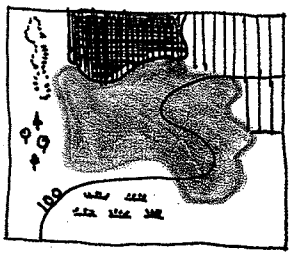


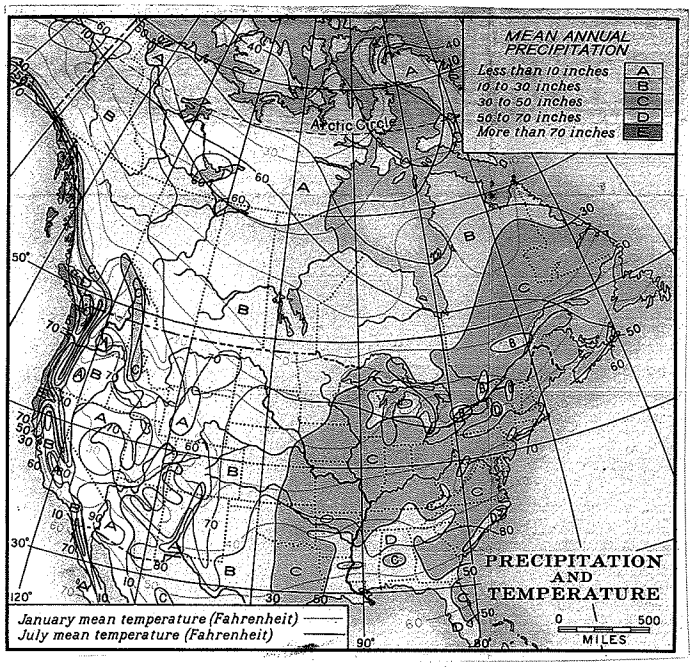
CONTOUR MAPS

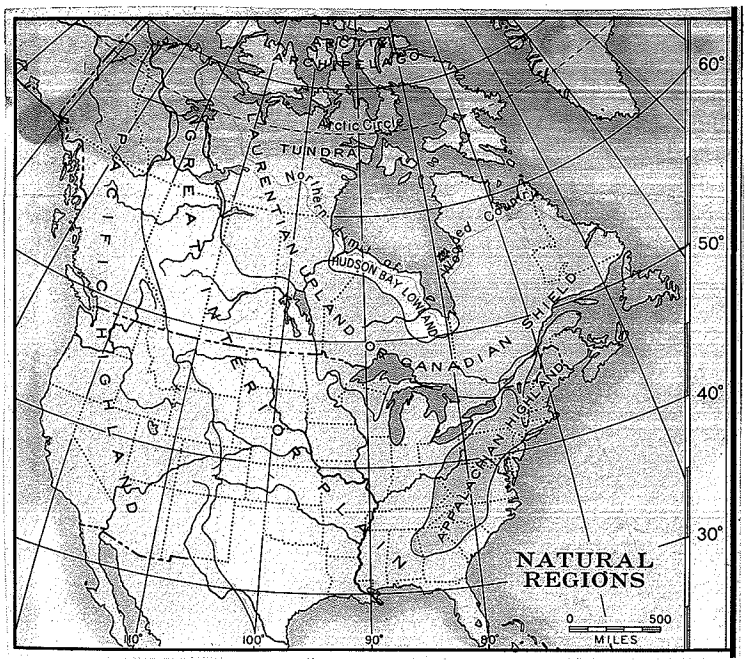
Contour maps may be used to show lines of erosion, precipitation, climatic conditions, as well as the typography of the land. Gradations of shading and cross hatching may be used on contour maps to differentiate. For suggestions relative to the arrangement of shadings, see " suggestions for making a chart".







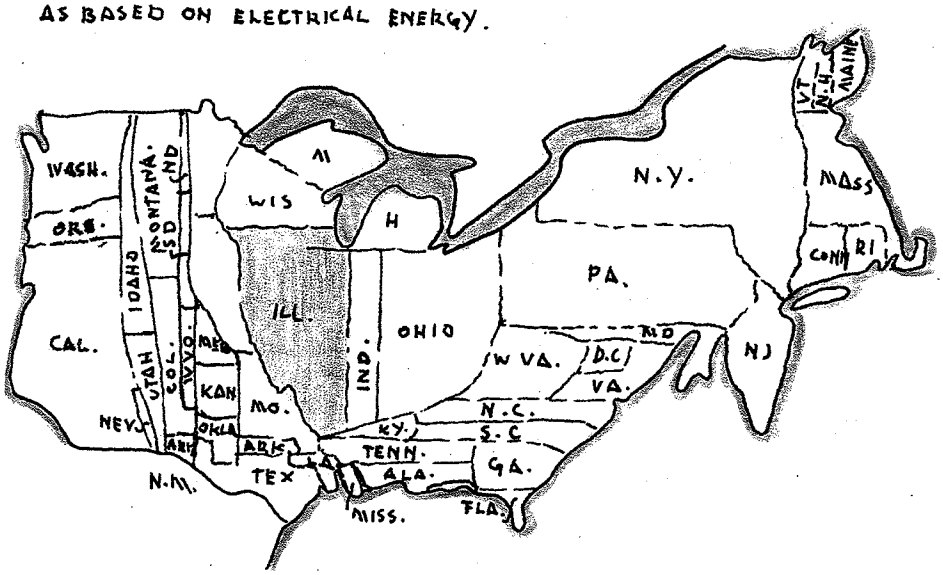

MEAN ANNUAL PRECIPITATION
Less than 10 inches
10 to 30 inches
30 to 50 inches
50 to 70 inches
More than 70 inches
A
B
C
D
E
Arctic Circle
PRECIPITATION AND TEMPERATURE
January mean temperature (Fahrenheit)
July mean temperature (Fahrenheit)
0
500
MILES


ARCTIC ARCHIPELAGO
Arctic Circle
TUNDRA
Northern
CORDILLERAN HIGHLAND
PACIFIC MOUNTAIN SYSTEM
GREAT PLAINS
INTERIOR LOWLANDS
HUDSON BAY LOWLAND
CANADIAN SHIELD
APPALACHIAN HIGHLAND
NATURAL REGIONS
0
500
MILES

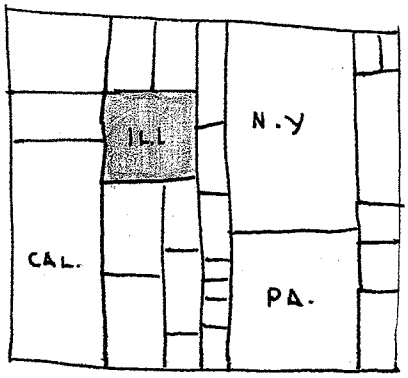
DISTORTED MAPS

IN a distorted map, geographic location of data is maintained by making the area of states, provinces, countries, etc., proportional to the quantitative data. Distorted maps are sometimes called proportional maps.

RELATIVE SIZE OF EACH STATE
AS BASED ON ELECTRICAL ENERGY.



OR



Chapter II.
SYSTEM OF SURVEY

1. General Description.

1. The initial meridians, from which ranges are numbered, are:

The Principal meridian passing about twelve miles west of the city of Winnipeg. At the fourth base line its longitude is 97°27'28".4.

The Second meridian in longitude 102° (very nearly).

The Third meridian in longitude 106°, and so on, each initial meridian after the second being four degrees west of the preceding one.

The Second meridian east, in longitude 94°. Ranges are numbered westerly from this meridian.

The Coast meridian of British Columbia, to which are referred the townships of the Fifth System, hereinafter described.

2. Sections being laid out of the precise width of eighty chains on the base lines, and the meridians being drawn from the bases, north and south, it follows that the townships south of each base measure in an east and west direction more than 480 chains, exclusive of road allowances, while those north of the base measure less than this.

3. The number and the width of road allowances between sections are not the same in all parts of the country. There are also differences in the methods of subdividing townships. Hence arise different systems of survey, five in all, styled the "first," "second," etc., systems of survey.

4. The instructions hereinafter are drawn up for the third system which is the most general; unless otherwise provided, they apply also to the other systems.

5. Preliminary to the subdivision into sections of any given portion of country, the same is laid out into townships by projecting the base lines from the initial meridians and the central meridians from the base lines to the correction lines.

6. The line between two parts of the country surveyed according to different systems is established as a correction line, that is to say, posts are planted on both sides of the road allowance on such line, each row governing the position of the boundary lines on its own side. Such road allowance is one chain and fifty links wide, except in the case of the dividing line between the third system of survey and the fourth system in force in the "railway belt" in British Columbia hereinafter described; here the road allowance between the systems is one chain wide. Between the fourth system and the fifth system no road allowance is left, but two sets of monuments are placed on the line dividing the two systems to govern the corners of townships, sections and quarter-sections on each side respectively.

2. FIRST SYSTEM OF SURVEY

7. In the first system of survey there is a road allowance of one chain and fifty links on every side of a section.

2. FIRST SYSTEM OF SURVEY (Continued)

The township, therefore, measures on each side four hundred and eighty-nine chains, subject to the deficiency or surplus resulting from the convergence or divergence of the meridians.

In the survey of the township the deficiency or surplus resulting from the want of parallelism of the meridians is set out and allowed in the range of quarter-sections adjoining the western boundary of the township. It follows that generally the lines bounding sections on the east or west sides are not meridians, but lines parallel to the eastern boundary of the township. All quarter-section sides are theoretically forty chains, except in the western range of quarter-sections of a township and in the sections adjoining a correction line which are subject to the discrepancies of the survey.

The operation of the first system of survey is restricted to only in general the older portion of Manitoba.

3. SECOND SYSTEM OF SURVEY

The second system of survey is similar in all respects to the first system, except in regard to the deficiency or surplus from the convergence or divergence of meridians which is distributed equally among all quarter-sections as in the third system.

The operation of the second system of survey is restricted to the following townships:-

Townships 1 and 2, ranges 1 to 8 inclusive; townships 19 to 30, ranges 1 to 12 inclusive; and townships 27 to 30, ranges 13 to 16 inclusive; the above ranges being all west of the Second Meridian. (See map.)

4. THIRD SYSTEM OF SURVEY

The third system of survey covers all the territory not expressly reserved for the other systems.

Road allowances of one chain in width are allowed along each section line running north and south and along every alternate section line running east and west, that is, along the north and south boundaries of the township and along the second and fourth section lines north of the south boundary of the township.

The township, therefore, measures from north to south, four hundred and eighty-three chains, and from east to west, four hundred and eighty-six chains, subject to the deficiency or surplus from the convergence of meridians.

The deficiency or surplus from the convergence or divergence of meridians is distributed equally among all quarter-sections involved, so that the lines bounding sections on the east and west sides are theoretically true meridians, and those on the north and south sides are parallel to the north and south boundaries of the township.

The surplus or deficiency found on the central meridians when closing on the correction line is divided equally between the quarter-sections adjoining that line.

4. THIRD SYSTEM OF SURVEY (Cont'd)

(Cont'd) In cases where the township outlines were first projected, the surplus or deficiency found when closing on the correction line was divided equally between the quarter-sections adjoining that line, except in the case of the closing on the first correction line, where the surplus or deficiency was carried to the first base line, or forty-ninth parallel of latitude.

Since the townships of the third system are, like those of the first and second systems, based on the international boundary and the initial meridians, while their dimensions, on account of the reduction in the number and width of the road allowances, are smaller, there occur fractional townships and ranges of the third system at junctions with the first and second systems.

The fractional township of the third system lying between a township of the third system and the township of the first or second system next in number is designated by the larger number followed by the letter A, as for instance:

Township 19A.

for the fractional township of the third system lying between township 18 of the third system and township 19 of the second system, west of the Second meridian.

Likewise, the fractional range of the third system lying between a range of the third system and the range of the first or second system next in number is designated by the larger number followed by the letter A, as for instance:

Range 24A.

for the fractional range between township 48, range 23 of the third system and townships 47 and 48, range 24 of the first system, west of the Second meridian, etc.

5. FOURTH SYSTEM OF SURVEY, OR SYSTEM OF SURVEY IN RAILWAY BELT, BRITISH COLUMBIA

The system adopted for the survey of the lands within the belt of twenty miles on each side of the Canadian Pacific Railway in British Columbia, is the third system, modified by adding to each quarter-section of one hundred and sixty acres, an allowance of three acres for roads, instead of locating this allowance along section lines.

This allowance is provided for by making each quarter-section on the base lines forty chains and fifty links, and on the meridians forty chains and twenty-five links.

The dimensions of the townships are therefore the same as those in the third system of survey, namely, four hundred and eighty-three chains north and south, and four hundred and eighty-six east and west. Since the townships of the third and fourth systems are based upon the forty-ninth parallel and the same initial meridians, there is no fractional township or range between them where the systems adjoin, but the northern boundary of the fourth system township coincides with the southern limit of the road allowance on the

c. (Cont'd) southern boundary of the third system township adjoining it to the north, and the eastern boundary of the fourth system township coincides with the western limit of the road allowance on the western boundary of the third system township adjoining it to the east.

d. In the fourth system of survey only one line is surveyed along a correction line and on this are placed two sets of monuments marking respectively the corners of townships, sections and quarter-sections north and south of the line.

e. The area covered by the fourth system is chiefly the Railway belt in B.C.

6. FIFTH SYSTEM OF SURVEY

a. Certain townships in the British Columbia railway belt in the lower valley of the Fraser river were surveyed by the provincial government according to the local system of survey, previous to the transfer of the lands to the Dominion. The townships are six miles square and are divided into thirty-six sections, as in the other systems. There are no allowances for roads, except in townships 12, 40, 41 and 42 where road allowances were laid out at the time of survey on every side of each section. The basis of the system is the forty-ninth parallel and a meridian which passes near the junction of Fraser and Pitt rivers. This meridian is called the Coast meridian. The townships are individually numbered, and not according to the general system of townships and ranges. The common designation of a township is "Township No. --, E.C.M." or "W.C.M." (east or west of coast meridian).

7. SETTLEMENTS, GROUP LOTS, TOWNSITES, AND OTHER AUTHORIZED SUBDIVISIONS

a. SETTLEMENTS. Land bordering on any river or lake, or other body of water, or on a public highway, and upon which settlements are in existence, may be laid out and divided into lots of a certain frontage and depth in such manner as appears desirable. In each settlement the lots are numbered, in regular order from one upwards, each lot being given a separate number. This system of numbering is adhered to, even when a settlement is laid out in ranges, instead of giving the same number to corresponding lots in the several ranges.

b. The width of the lots in a settlement is laid out on a line, called the base line, established near the front of the settlement and perpendicular to the side lines of the lots.

c. The base line is offset when it is desired to change its position, either for bringing it closer to the improvements or for any other reason, without changing its direction and that of the lot lines.

d. The base line is deflected when it is desired to change the direction of the lot lines, the latter remaining perpendicular to the base.

e. The side lines of a settlement lot are parallel lines except at the places, if any, where the course of the base line changes. Unless some reason exists for adopting a different line, it is convenient to make the rear boundary of a settlement lot parallel to the base line.

(Cont'd) The side lines of a lot fronting on a river are not extended across the river. They are stopped at the points where they first strike the bank of the river and between those points the bank of the river is the boundary.

A road sixty-six feet in width is laid out across the settlement in the most convenient location, also such further roads of the same width as may be necessary to give access to every settlement lot.

GROUP LOTS. In remote parts of the country, separate lots, not exceeding one hundred and sixty acres each, may be laid out, each lot being designated by an individual number, by the number of the group to which it belongs and by the name of the province or district.

The limits of groups and their numbers are those of the sectional maps issued or projected by the Surveyor General. Each group comprises eight townships in latitude and fifteen or a smaller number of ranges in longitude.

A group lot is in the form of a rectangle, the length of which does not exceed twice the breadth. A departure from this rule is allowed when the lot is bounded by a road, the shore of a lake or stream, or by another lot, in which case it is made as nearly rectangular as circumstances permit.

The breadth of a group lot fronting on a road or on a navigable river or lake must not be made greater than the depth.

As far as practicable, the boundaries of a group lot are straight lines running north and south, or east and west.

A group lot does not exceed one hundred and sixty acres. When a larger area is to be covered, it is subdivided into such a number of lots that none exceeds one hundred and sixty acres.

TOWNSITES. A townsite is made by the subdivision into town lots of a section, group lot or settlement lot, or of portions thereof.

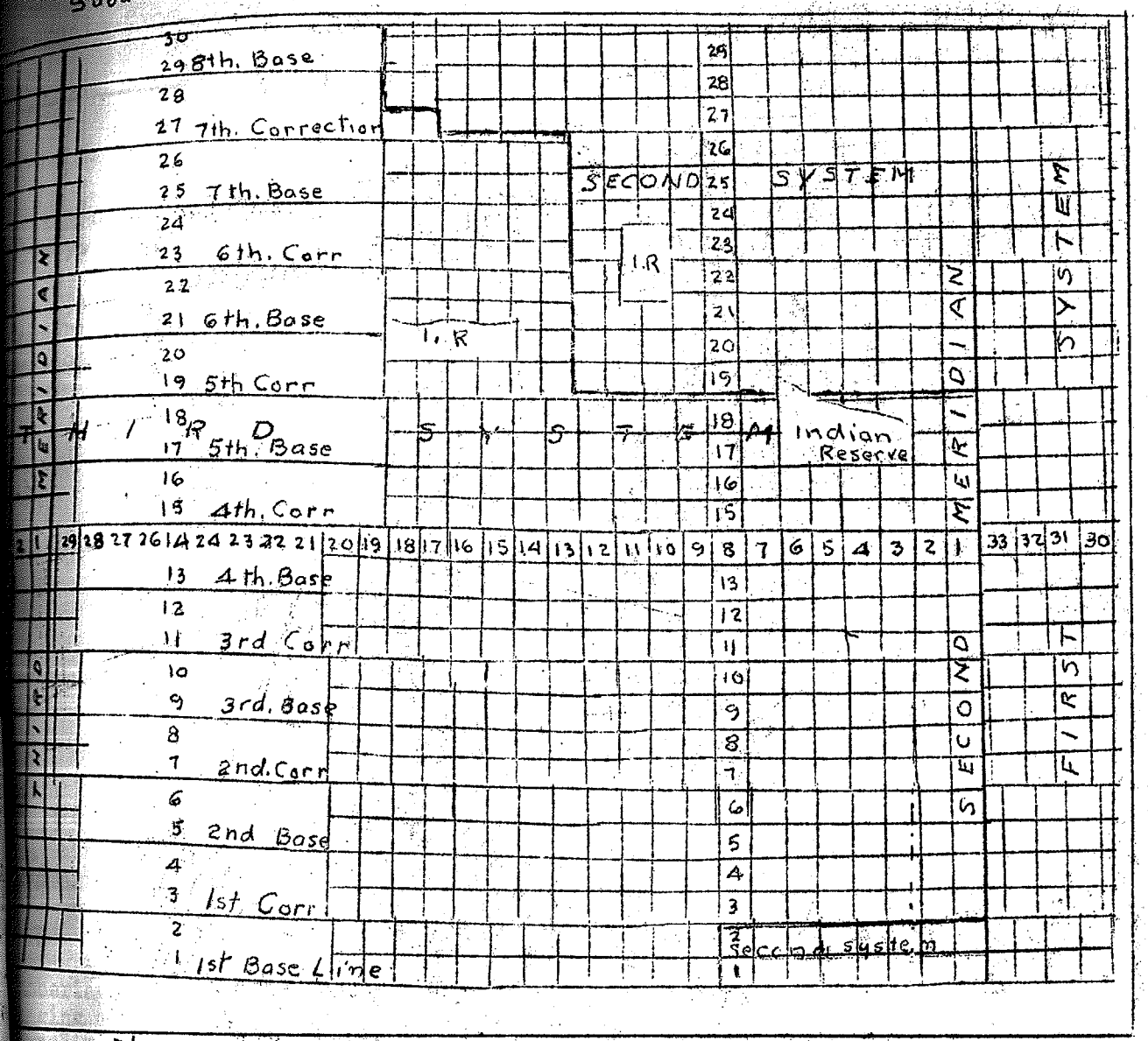
In unsurveyed territory, the land is laid out into sections, settlement lots, or group lots, before the survey of the townsite is commenced.

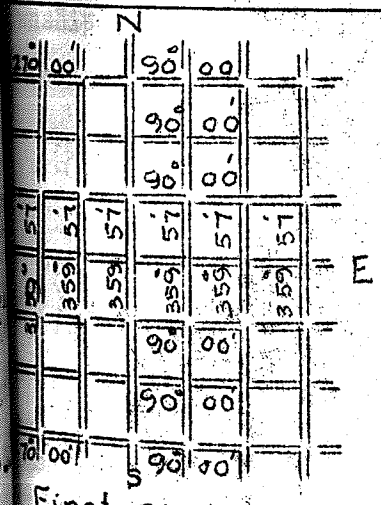
On flat ground, the streets and avenues of a townsite, generally cross each other at right angles, but different angles may be adopted wherever they are considered preferable.

As a general rule, streets and avenues are not made less than sixty-six feet in width.

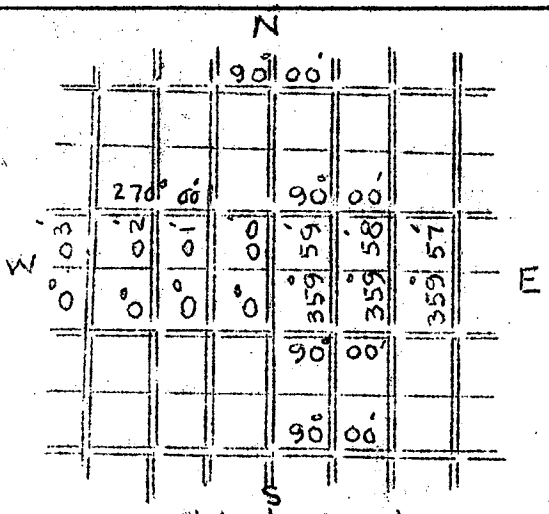
The main streets and avenues may be made wider than sixty-six feet, where it is anticipated that the extra width will be required for accommodating the traffic.

Subdivision of Country into blocks and Townships





First System Township



Third system Township

Bearing are referred to a meridian through the centre of the Township in each case

For Angular Convergence see page 177 of text also chart in Astronomical Field Tables Convergence per mile for various Lats

Extracts from "MANUAL OF INSTRUCTIONS FOR THE SURVEY OF DOMINION LANDS"

SURVEYS

System of Survey.

41. The Dominion lands shall be laid off in quadrilateral townships, each containing thirty-six sections of as nearly one mile square as the convergence of meridians permits, with such road allowances, and of such width, as the Governor in Council prescribes. Such sections shall be bounded and numbered as shown by the following diagram:-

Townships. Sections.

N.

31	32	33	34	35	36
30	29	28	27	26	25
19	20	21	22	23	24
18	17	16	15	14	13
7	8	9	10	11	12
6	5	4	3	2	1

W. E.

Township in the 3rd System

5.

Township Boundaries.

42. The lines bounding townships on the east and west sides shall be meridians; and those on the north and south sides shall be chords to parallels of latitude.

Numbering and Ranging of Townships.

43. The townships shall be numbered, in regular order, northerly from the international boundary, or forty-ninth parallel of latitude, and shall lie in ranges numbered, in the province of Manitoba, east and west from a certain meridian line run in the year one thousand eight hundred and sixty-nine, styled the principal meridian, drawn northerly from the forty-ninth parallel of latitude at a point ten miles, or thereabouts, westerly from Pembina; and elsewhere in ranges numbered from such other initial meridians as the Minister orders to be established, which meridians shall be styled the second, the third, the fourth meridian, and so on, according to their order in number westward from the principal meridian.

Width of Townships on base line. Meridians.

44. Townships shall be given their prescribed width on the base lines hereinafter mentioned; and the meridians between townships shall be drawn across such bases, northward and southward to the depth of two townships therefrom, that is to say, to the correction lines hereinafter mentioned.

...se lines.

45. The said forty-ninth parallel, or international boundary, shall be the first base line, or that for townships numbered one; the second base line, shall be between townships four and five; the third between townships eight and nine; the fourth between townships twelve and thirteen; the fifth between townships sixteen and seventeen; and so on northerly, in regular succession.

...rrection ...ines.

46. The correction lines, or those upon which the jog resulting from the convergence of meridians shall be allowed, shall be those lines running east and west between townships and midway between the bases, which lines are, the line between townships two and three, that between townships six and seven, that between townships ten and eleven, and so on.

...ivision of ...ctions.

47. Each section shall be divided into quarter-sections of one hundred and sixty acres, more or less, subject to the provisions hereinafter contained.

...rror.

48. The north and south error in closing on the correction lines from the north and south shall be allowed in the ranges of quarter-sections adjoining, and north or south respectively of the said correction lines; except in the case of the north and south error in those townships between the first and second base lines, which error is to be left in the last quarter-section adjoining in the said first base line.

...eficiency or ...rplus.

49. In the survey of a township, the east and west deficiency or surplus shall be allowed in the range of quarter-sections adjoining the west boundary of the township; but the Governor in Council may order such deficiency or surplus to be equally distributed among all the quarter-sections involved.

...regular ...arter- ...ctions.

50. The dimensions and area of irregular quarter-sections or other parcels of land shall, in all cases, be returned by the surveyor at their actual measurements and contents: Provided that in cases in which road allowances are not between but through sections, the area reserved for such road allowances shall not be included in the area returned for a quarter-section, or other parcel of land.

...numents ... indicate ...rners.

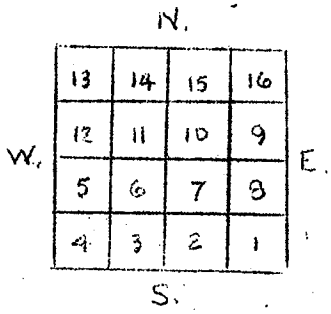
51. Except as hereinafter provided, only a single row of monuments to indicate the corners of townships, sections or quarter-sections, shall be placed on any survey line thereof; such monuments shall, on north and south lines, be placed in the west limit of the road allowances, and on the east and west lines, in the south limit of road allowances, and in all cases shall fix and govern the position of the boundary corner between the adjoining townships, sections, or quarter-sections, on the opposite side of the road allowance.

Corners on correction line.

52. In the case of township, section and quarter-section corners on correction lines, monuments shall, in all cases, be placed and marked independently for the townships on each side; and when a road allowance is laid out along such a line, the monuments shall be placed in the limit of the road lying alongside the lands which they are intended to define.

Legal subdivisions.

54. To facilitate the description for letters patent of less than a quarter-section, every section shall be taken to be divided into quarter quarter-sections, each of forty acres more or less, which shall be styled legal subdivisions, and shall be numbered as shown in the following diagram:-



Special provisions as to survey of certain lands.

55. Notwithstanding anything in this Act contained, the Minister may direct--

(a) that lands bordering on any river, water course or lake, or on a public road, be surveyed, laid out and divided into lots of any certain frontage or depth, in such manner and with such roads as appears desirable;

(b) that lands be surveyed, laid out and divided into town or village lots, with such streets, lanes, places, squares and commons as are considered necessary.

(c) that roads, not exceeding sixty-six feet in width, be surveyed and laid out where such roads appear to be required;

(d) that lands in the Yukon Territory and in remote parts of the unorganized portions of the provinces of Manitoba, Saskatchewan and Alberta and the North-west Territories, be surveyed, laid out and divided into lots of such size and shape as may be found advisable;

(e) that lands in mountainous regions where the ordinary mode of survey is impracticable, be laid out into townships, sections, quarter-sections and legal or other authorized subdivisions by fixing the corners of such townships, sections, quarter-sections, and legal or other authorized subdivisions by reference to points determined by astronomical observations or by triangulation or other geodetic process;

(f) that townships, sections, quarter-sections, legal or other authorized subdivisions, settlement or river

(f) (continued) lots, town or village lots, or other lots or parcels of land, surveyed or laid out under the authority of this section, be described for patent by numbers according to plans or record, or by metes and bounds, or by both, as seems expedient.

OFFICIAL PLANS OF DOMINION LANDS

Description of plans.

56. Plans of Dominion lands surveyed or resurveyed under the provisions of this Act shall be plotted from the surveyors' field notes under the direction of the Surveyor General; and such plans shall show the direction and length of the boundaries, the nature and position of the boundary monuments and the areas of the quarter-sections or other parcels of land laid out.

Confirmation of plans.

2. The confirmation of any such plan by the Surveyor General shall be held to be a confirmation of the survey or resurvey as the case may be, and the confirmed plan shall be the official plan; but no survey or resurvey of Dominion lands shall be confirmed unless made in conformity with the provisions of this Act.

When lands are deemed surveyed.

3. No land shall be held to be surveyed, or resurveyed, until the official plan of the survey or resurvey has been confirmed by the Surveyor General.

Correction of plans.

4. Where any plan of Dominion lands of record in the Department of the Interior is found to have been improperly or incorrectly plotted from the filed notes of the survey, or where any omissions or clerical error or other defect is found in the plan, the Surveyor General may cause a new plan to be plotted from the field notes of the survey or a new plan to be made showing such omissions of error or defect corrected, and such new plan shall, after confirmation by the Surveyor General, become the official plan of the survey and shall be used for all purposes instead of the old plan: Provided that nothing in this section shall affect any rights claimed or set up under the old plan prior to the date of the confirmation of the new plan, and that all transactions prior to that date shall remain in force as if the new plan did not exist.

SURVEY OF AUTHORIZED SUBDIVISIONS

Establishing line between sections.

61. When it is necessary for a Dominion land surveyor to establish the division line between two sections, he shall effect this by connecting, by a straight line, the opposite original section corners, if they exist, and if not, by similarly connecting points established in renewal thereof, in accordance with the provisions of this Act relating to lost corners, giving, in either case, the quarter-sections involved an equal breadth.

aying out alf or uarter-ections.

2. In laying out a half-section or a quarter-section he shall connect the opposite quarter-section corners by straight lines, but when the quarter-section corner in any of the limits of the section has not been marked by a monument in the original survey, then such a corner shall be established by giving to each half-section its proportionate share of such limit according to the official plan of the township, and the half-sections shall then be laid out by connecting the corner so established to the opposite corner.

ther ubdivisions.

3. In laying out other authorized subdivisions he shall give to every such subdivision its proportionate share of the frontage and interior breadth, according to the official plan of the survey, and connect the resulting terminal points by a straight line.

ines on round to be rue limits.

4. The lines or limits so drawn on the ground in the manner above described shall, in the respective cases, be the true lines or limits of such section, half-section, quarter-section, legal or authorized subdivision, whether they correspond or do not correspond with the area expressed in the respective official plans or letters patent for such land.

ORIGINAL BOUNDARY LINES

undaries as fined by numents all be emed the ue undaries.

62. All boundary lines of townships, sections or other authorized subdivisions, and of towns or villages, and all boundary lines of blocks, gores or commons, all section lines, and all limits of lots or parcels of land surveyed, or resurveyed, as defined by monuments placed at the corners of any such townships, sections or other authorized subdivisions, towns or villages, or of any blocks, gores, commons, lots or parcels of land under the authority of this Act or of the Governor in Council, shall, after confirmation of the survey or resurvey by the Surveyor General and subject to the provisions herein contained, be the true boundaries of such townships, sections, or other authorized subdivisions, towns or villages, blocks, gores, commons, lots or parcels of land respectively, whether the same, upon admeasurement, are or are not found to contain the exact area or dimensions mentioned or expressed in any official plan or in any letters patent, grant or other instrument of or affecting any such township, town, village, section or other authorized subdivision, town, village, block, gore, common, lot or parcel of land.

very ivision to mprise e area thin its undaries.

63. Every township, section or other authorized subdivision, town, village, block, gore, common, lot, or parcel of land, shall consist of the whole width included between the several monuments placed as aforesaid, at the several corners thereof, and no more or less, notwithstanding any quantity or measure expressed in the official plan, letters patent, grant or other instrument.

liquot part.

64. Any letters patent, grant or instrument purporting to convey any right or interest in any aliquot part of any section, or other authorized subdivision, block, gore, common, lot or parcel of land, shall be construed to affect such aliquot part of the quantity it contains on the ground, whether such quantity is more or less than that expressed in such letters patent, grant or instrument.

oad allowances in owns and illages to be ublic highways.

65. In every town or village surveyed or laid out under the provisions of this Act, all allowances for roads, streets, lanes, or commons, laid out in the original survey of such town or village, shall be public highways and commons; and boundary lines defined by monuments placed or planted in the original survey or resurvey of such town or village, to designate or define any allowance for a road, street, lane, lot or common, shall be the true boundaries of such road, street, lane, lot or common; and all Dominion land surveyors employed to make surveys in such town or village shall follow and pursue the same rules and regulations in respect of such surveys as are, by law, required of them when employed to make surveys in townships, as far as such rules and regulations are applicable.

A Topographical map may show only plan positions of the detail to be shown, but a complete topographical map should in addition show the relief of the ground. A good topographical map of a country is actually the mother map from which many different studies can be made, such as the location of railroads, highways, drainage works, water power studies as well as many others.

Methods of showing relief.

(1) A system using shadows cast by elevated areas.
(2) A system using different tints to indicate zones or areas of different elevations; such a system is useful for air flight maps.
(3) A system of hachures using short lines of different weights drawn along the slopes, the heavier lines indicating steeper slopes. This system is still used to illustrate mountain ranges on small scale maps such as a country like Canada or one of the continents and as symbols to indicate a quarry gravel pit, eroded bank and a railway cut or fill on large scale plans.

All three of these methods give no real idea of the actual elevations or slopes of the ground and therefore are today little used except for some specific purpose.

(4) The present day practice is to represent the relief by means of contour lines. The conception of using contour lines to show relief came to "Buache" when he noted the marks left on the sea beach by the ebbing of the tide.

A contour line is a line drawn through points of equal elevation above some datum. If a contour could be drawn through consecutive points of equal elevation we would obtain a continuous line. Since the elevations of the contours above the datum are marked on the map it is possible to obtain the approximate elevation of points on the ground on or adjacent to the contours. This feature of a good topographical map is of inestimable value, to many users of maps but it is especially valuable to the engineer. In addition this system makes the form of the country apparent to the eye, for example view figure 133, page 390 in your text from a point only a few inches above the bottom of the page and note how the ridges and valleys stand out in relief as the contours bring out that relief. Now look at the same figure but from a point beyond the top of the page and look at a small angle to the plane of the paper. From this position what are really valleys appear to be ridges with a stream running along their top, and the actual ridges look like valleys.

Since the contour is the intersection of a level surface with the surface of the ground, it should be clear that on any one map or plan only the intersection of certain level surfaces will be shown. In other words the vertical distances between contours that is the contour interval is a function of the character of the country, the horizontal scale of the map and the purpose for which the survey and map are made. When the contour interval is known or shown on a map the spacing between contours indicates the steepness of the slopes.

Imagine a depression in the surface of the ground, partly filled with water, which water surface is at say 100 ft. above a datum. Then the shore line of such a pond would be the 100 ft. contour in life size. If the water was raised 5 ft., that is a contour interval of 5 ft., then the new shore line would be the 105 ft. contour to natural scale. A map of the shore line at the 100 ft. elevation would of course be a reasonably accurate reduction from life size of the 100 ft. contour to a suitable map scale. The contour interval is always taken as a whole number of feet, and may be 1 ft. 2, 5, 10, or any suitable interval to suit the country, plan scale, and purpose of the map.

The Surveys Branch of the Department of Mines and

they plan to continue this mapping.

For contours of a cone, pyramid, and hemisphere, see your text page 391 and for a contour across a sloping street see page 393.

Study these together. Section 326, Characteristics of Contours and Fig.135 should be carefully studied. Turn next to Section 332, Mistakes in Sketching Contours and study these to see how they fail to meet the characteristics of contours.

Study Sections 327 and 328 and Figures 137 and 138 as they are really dealing with the same idea in the use of a contour map. Read Section 329, Drainage Areas and study carefully Figure 139 page 397. Read also Sections 404 and 405, page 486. The heavy broken line on the figure shows how the water shed draining into the stream above the dam can be traced out. If the scale of the map was known, a planimeter could be used to determine the area in square inches enclosed within this water shed line. Then by using the map scale this could be converted into square miles or acres as the case requires. For example, if the planimetered area was 13.5 sq.inches and the map scale was 1"= 1000', then 1 sq. inch would be 1000 X 1000 = 1,000,000 sq. feet and the area of the enclosed water shed would be 13.5 X 1,000,000 = 13,500,000 sq. ft. or $\frac{13,500,000}{43560}$ acres or $\frac{13,500,000}{43560 \times 640}$ sq. miles since 1 sq. mile equals 640 acres and 1 acre = 43560 sq. feet. Or a sheet of transparent cross section paper 10 x 10 or a 1" x 1" square grid system could be ruled on a sheet of transparent paper and this could be laid over the map and the square inches within the heavy broken line could be estimated by counting the full squares and estimating the fractions of squares along the margin. Thus the square inch area and finally the acres or square miles could be found.

Again on Fig.139 the shaded area shown indicates the area that would be flooded if a dam was erected as shown so that the top of the dam was carried up to elevation 960. Here again the planimeter could be used to find the area in square feet enclosed within the 960 contour above the dam. Similarly the area enclosed above the dam by the 940 foot contour and also by the 920 foot contour. Now the 960 foot contour is the trace of the level surface 960 intersection with the earth's surface along the sides of the valley and similarly the 940 contour is the trace of the 940 level surface, and so on. Thus we have two end areas 20 feet vertically apart and the volume of water between the 960 level surface and the 940 level surface would be the average of the two end area (level surfaces within the respective contours) x 20 feet (the contour interval) in cubic feet. We could then get the volume between the 940 and the 920 contour and finally make an approximation of the number of cubic feet from the 920 level surface to the bottom of the stream above the dam. By summing together these three volumes we would arrive at the probable approximate water impounded by the dam.

An alternative method would be to draw a straight line up the length of the shaded area and mark off chainages along it where the width of the area changed noticeably and then at each chainage point we could plot a cross section of the various depths at points on a cross section normal to the long centre line. The depths being read off the contours from the 960 foot level surface down. The areas of these cross-sections could be calculated in square feet and then from the chainages between them one could calculate the approximate volumes, which when summed up would give the approximate amount of water stored behind the dam.

Sketching Con

Sec [illegible] and 141 should be studied carefully. F[illegible] small scale maps using fairly large contour intervals this method is used very largely in mapping. The streams and ridges provide the backbone for the topography and a skilled topographer can make a very satisfactory map from comparatively few points located in plan and elevation at critical points on streams and ridges. However, for such sketching the topographer should understand how land forms have been developed. A knowledge of geology and particularly physiography, that is the study of land forms, is a great help.

Study Section 331, Sketching Contours by Interpolation from known elevations and see fig. 142.

Contour Problems, Sec. 333, illustrates three studies of engineering problems that can be solved with the aid of good topographical plans. Read and study these illustrations.

Locating a Grade-Line, Sec. 335 should be read and the figure 146a should be studied and understood.

Topographical Surveys - Read Sec. 336. Control both plan and elevations are essential for maps covering large areas. Methods of locating points from the transit line Sec. 337 and fig. 147 should be studied.

Methods of Locating Contours for Plans of Moderate-sized Areas

(1) Sec. 338, locating contours by cross-sections suitable only for small zones or strips or small areas. Many of the airport areas were contoured by this method.
(2) Sec.339, Locating contours by profiles. This is also suitable for narrow belts or small areas.
(3) Sec.340, Locating points on the contours. This method is applicable only for a large scale small area plan. It is costly of time.
(4) Locating contours by the hand level, Sec. 341. This method finds its proper field in surveys for railroad or highway where topography is required along a comparatively narrow belt.
(5) Locating contours by cruising with compass and hand level or clinometer, Sec. 341a, using pacing for controlled distances where errors cannot grow to large amounts, or by using the trailer tape and the topographic clinometer. This method is used in wooded areas where stadia or plane table would be too costly. Or a barometer could be used on a compass and pace traverse to give contours in such areas.

Sec. 342. Location of Streams and Shore-Line. Read the section carefully.
Work out the Problems on the auxiliary sheet.



Map scale 1" = 5000' Contour interval 20 feet.

Problems. (1) Show by means of a heavy broken line the limits of the water-shed of the Nonsuch River within the limits of the map shown above.

(2) Determine this area of water-shed in acres and in square miles using a planimeter or by counting squares as described in the notes.

(3) A dam if built where shown with a spill-way at an elevation of 200 would provide a storage area within the 200 foot contour. Determine the amount of water that would be impounded by the dam (if the water reached the spill-way crest) in cu. ft and in acre feet. An acre foot is 1 acre covered 1' deep.

(4) A, B, C, D, E, F and G are highways — On a sheet of graph paper and using a horizontal scale of 1" = 5000' and a vertical scale of 1" = 40' (These are suggested but the scale used will depend on the paper) Plot the ground profile for E F. taken from the contours. The bridge has an elevation of 160. Lay a rough grade line on the profile.

PHOTO-TOPOGRAPHIC SURVEYS

1. Ground Photo-topographic work.

Dr. Deville in 1897 applied it to mapping in Western Canada. Other countries in Europe, especially France, had done some work on it, Suitable to rough country with outstanding bold features, since for plotting the same point must be identified on photographs from two [2] different stations. - Contour interval may be 100 feet up to 500 feet.

A base line is measured and connected up with a triangulation scheme connecting the lesser summits in the area. At these stations a camera is used (after the transit triangles are read), and a series of photos are taken around the station, the direction of the exposures are recorded by reading a graduated circle similar to the transit horizontal circle. - The camera axis is set horizontal by level bubbles so that the photo plane is vertical and on the photo plate the horizontal plane and vertical plane are indicated by indicating marks. The plan positions and elevations of points can be plotted from the position of such points shown on two [2] photos from 2 different stations. Quite a fair amount of this mapping had been carried out in British Columbia by the Dominion Government of Canada.

AERIAL PHOTOGRAPHY APPLIED TO MAP-MAKING

National Topographic Map of Canada

Canada has been divided into zones 8° in longitude wide at such longitude that the 50 zone between longitude 88° and 96°. These zones are then divided into map sheets on the 16 mile scale so that such sheet is 4° in latitude deep and the north border of sheet No. 52 is at latitude 52°.

Each 16 mile to the inch sheet is considered to be sub-divided into 4 sheets on scale of 8 miles to the inch and 16 sheets on scale of 4 miles to the inch, then 64 sheets on scale of 2 miles to the inch; and finally 256 map sheets on a scale of 1 mile to the inch. All these sheets are practically the same size.

Quite a large area of the northern part of Canada has been mapped on the scale of 4 miles to the inch, and for this mapping, oblique photographs were very largely used.

Oblique Photographic Mapping

Three cameras of fixed focal length are now generally used, although at first a single camera was used. The angle of dip of the camera is about 18° to 19° and one view would be taken straight ahead and one to left and one to right of line of flight at angles of 45° to 52° with a side overlap of about 25% and views being taken about every 2 miles apart when plane was at about 5,000 feet. Flights preferably E and W in strips so flight lines about 6 miles apart at 5000'. Desirable that each photo shows a piece of the horizon.

Procedure followed when such map is planned is to plan on best available map of area the type of control by means of ground surveys. These will probably be stadia traverses along streams and lakes so as to cross the projected flight lines and to provide control for the plotting. The R.C.A.F. is then issued instructions as to altitude, angle, frequency of pictures, etc., and they make the flights taking the photos and on these are recorded the altimeter readings.

The Surveyor next makes the ground control survey and carries with him a set of the photographs properly numbered. When he is able to identify points on the photos beyond doubt, such as the tip of an island, creek mouth, etc., he uses such points as points of his traverse, and marks it on the photo by a pin prick and enters on the back of the photo the number of his traverse station. In this way the photos are tied to the ground survey and their scale is controlled.

An oblique photograph is really a perspective view and in order to plot it a perspective grid prepared for the altitude of the picture must be used. Such perspective grids have been developed on glass for altitude differences of 25 feet and near the required altitude of the flights. The perspective square represent 10 chains to a side. A trial grid using the altimeter record for first trial is placed over the photograph on which two points of the ground survey are marked. The distance between the two points is read off on the grid and compared with the surveyed distance. If it agrees, then the grid is correct, but generally other grids must be tried until the proper one is found.

Then the detail to be taken from the photo which is marked up with white ink is now transferred to a rectangular grid, the squares on which represent 10 chains. This transfer is by visual estimation.

A strip plot is made along a flight and then this strip has to be reduced to fit in between control points on the carefully plotted map projectors - After plotting the strips, minor adjustments have to be made along their margin so as to complete the plot.

Mapping From Vertical Air Photographs

In taking the photographs, the procedure is the same as for oblique photography, that is, you must obtain control upon the ground by ground surveys, the photographs must be taken in strips. The flight altitude ranges from about 8,000 to 15,000 to 18,000 feet above the area, and flight lines are from 2 to 3 miles apart, but must provide a lateral overlap of about 25% while the carmea plate is horizontal, i.e., axis of the camera vertical and the overlap of successive photographs along a flight should be about 60%. The photographs are plotted in strips, the strips fitted to the control and are fitted together to cover the whole map area. The actual method of plotting is, however, quite different from the oblique method.

Stated in a general way, the basic principle made use of in the plotting of vertical photographs is the property that they have of being "angle true" at their centre. That is, if you draw radial lines on such a photograph from its centre to a number of points the angles measured at the centre will be true angles and the same as they would be on the ground if you were to set up a transit and measure them. If the base is measured, the distance plotted will be true, and if the length of the base is assumed, the same scale will be carried consistently right through so that the proper correction can be made when a strip is checked up against the control.

This may be more readily understood by reference to the diagram. The diagram shows a strip of vertical aerial photographs as taken with overlaps of over fifty per cent along the line of flight, with their principal points marked upon each and numbered from one to five inclusive. Below, the five aerial photographs have been separated, their principal points marked and numbered thereon and lines joining the principal points indicated. In Fig. 13-2 the five consecutive aerial photographs with their principal point bases indicated thereon have certain selected minor control marked. Below, the five photographs are shown with each selected minor control marked on the overlap common to adjacent prints and with short radial lines drawn through them and through control point 171 (on the central photograph of the strip of five) thus making the photographs ready for the strip structure plot. Fig. 13-3 gives an illustration of the process of plotting, a transparent tracing linen or xylonite strip being placed in turn over the first, second, third and fourth photograph of the flight and the features marked up thereon. Fig. 13-4 shows the skeleton strip plot structure, firstly, as obtained from the first five photogrphs, and secondly, as extending from control 171 until it intercepts the next control on the strip, namely, control 182, both controls being fixed by intersections. Fig. 13-5 indicates on the second photograph, the detail which is to be transferred to the resulting map. This topography is transferred to the strip plot by placing the photograph under

the tracing linen and adjusting where necessary the final plotted position on the tracing to agree with the radial directions of image points from each of two consecutive principal points. The other photographs are likewise treated in turn. Fig. 13-6 shows the strip reduction in its correct position on the projection sheet on which has been plotted the control data for the assembly of the final map sheet.

Making Aerial Mosaics

Apart altogether from their use for mapping, aerial photographs have important uses in other fields, particularly in the making of mosaics and in the studying of timber types, water-power possibilities, of geological structure, and of any other feature peculiar to the area under observation.

The aerial mosaic is the assembly of photographs of an area to form a complete picture of the whole area, and for this reason it has a very popular appeal.

The use of vertical aerial photographs for this purpose and their assembly into mosaics having a regular and uniform scale is a work of a very high technical order and is not as simple as one might at first suppose. As with the mapping hitherto described the control in this case is a very important feature and must be strictly taken into account. In addition to this, there are other features such as corrections for tilt and for differences in scale, as well as mechanical considerations such as having the photogrphs match in tone throughout so that the resulting assembly will not have a patched-up appearance. When the mosaic is prepared, copies are reproduced by photography, this process allowing for a certain amount of latitude in the matter of enlargement or reduction.

For the study of timber types, water power possibilities and of other features of the earth's surface, the photographs are usually examined under a stereoscope where the relief becomes visible and the features have the correct relationship to one another.

By means of such a study many of the problems confronting the investigator are removed and his examination is greatly simplified.

Other Aerial Mapping

Aerial photographs are also used in conjunction with ground surveys in the making of topographic maps. The contour lines and ground control being carried out by ground surveys and plane table work some times being carried out directly on enlarged prints of the aerial photographs.

Finally, aerial photographs are being used more and more for Topographical mapping, where the photographs are used to determine elevations of points on the ground. A number of very complicated machines and others not so complicated have been employed in this work. They practically all depend upon an evaluation of the effect of palallax when the same point is viewed from two adjacent aerial camera positions. The stereoscope provides a simple means of viewing two overlapping photographs so as to bring out the relief that is the height or depth dimension on the photographs. The comparator, the Stereocomparator, the Stereautograph, the Aerocartograph, the Brock Process, the Multiplex aero-projector, using Anaglyphs, the Wild Autograph, and the Fairchild Stereo-Comparagraph, represent some of the more recent developments in this field. Examples of Anaglyphs and two photographs set up under the Stereo-Comparagraph will be shown. This instrument can be used to plot plan positions by an attached tracing arm, to the same scale as the photographs and by measuring the parallax on a micrometer, it may be used, with the assistance of a parallax table to determine differences in elevation, thus permitting contour plotting.

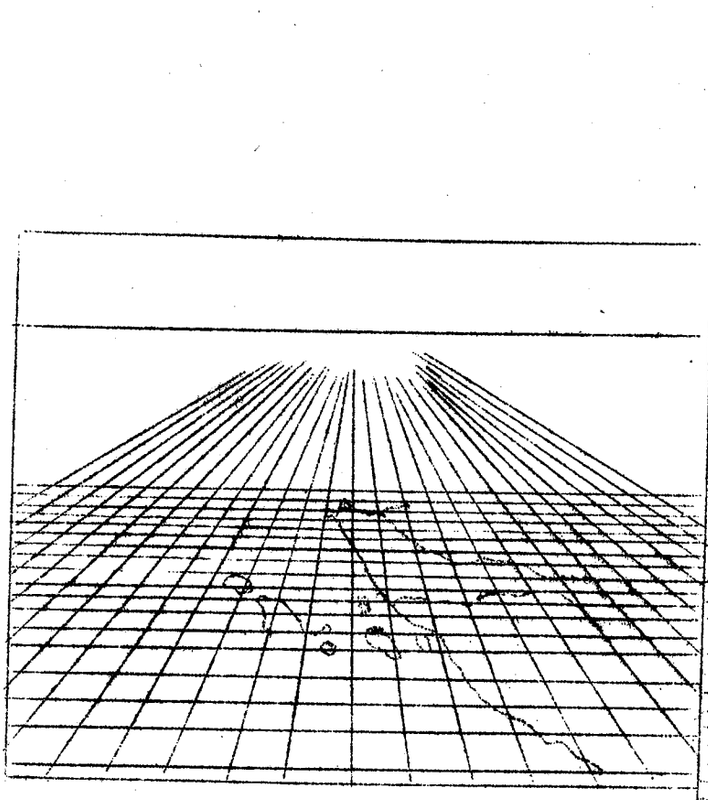
Photo-Topographic Mapping

Sketches to accompany Notes on Photo-Topographic Surveys

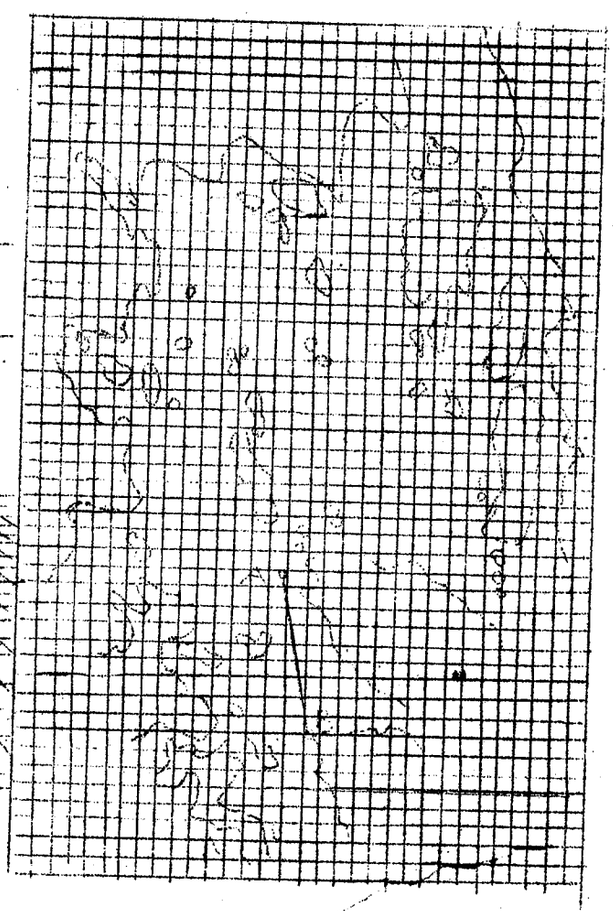


Fig 13 Plotting Vertical Aerial Views by Radial Intersections

Skeleton completed for scale and direction



Correct Glass Grid superimposed on plane Elevation 4845 Ft.



COMPILATION FROM OPPOSITE PHOTOGRAPH

140

MAPPING FOR PLANNING

T.V.A. METHOD OF PRESENTATION

This method is used primarily for agricultural land but the classifications could be extended to forest, urban, recreational, and other areas. The qualities of the land are represented by digits which deal with land units of not less than 200 acres, resulting in an accurate quantitative picture of the occupancy pattern. The complete symbol of the land unit consists of three separate parts: namely, a Roman numeral, a short fraction, and a long fraction. For example:

$$\text{II}\ \frac{3}{3}\ \frac{2\text{D}323}{233\text{I}233}$$

This symbol would be found at the lower right-hand corner of the map ------ its meaning is very accurate.

The mosaics used as base maps in the field have a scale of I:24,000 or I inch equals 2,000 feet. The base for this map is the arial mosaic made up from air photographs. Each map covers an area of I20 square miles.

FIELD PROCEDURE

The steps in the field procedure are as follows:

a. The recognition of an essentially homogeneous land unit.
b. A tentative characterization in the form of a long fraction.
c. The drawing up of the tentative boundaries of the unit.
d. The checking and corresting of the boundaries at every point to which access is possible.
e. The recording of a final long fraction.
f. The making of final judgements for the three sumary classifications.

TABLES

The tables which elucidate the land classification symbol are more or less self-explanatory and therefore need little or no discussion. The tables follow immediately.

TABLE

This table shows the major physical conditions of the land on the basis of which the homogeneous units are delineated, as noted by the digits in the denominator of the long fraction.

1st Digit - Slope
1. Relatively level
2. Relatively level to undulating
3. Undulating to moderately hilly
4. Hilly
5. Steep

2nd Digit - Drainage
1. Thorough
2. Adequate
3. Poor
4. Very poor
5. Excessive

3rd Digit - Errosion
1. Little or no observable errosion
2. Little denudation by errosion
3, Sheet errosion and ephemeral gullies
4. Excessive sheet errosion and gullying
5. Excessive gully errosion

4th Digit - Stoniness
1. Free from stones
2. Moderately stony
3. Stony
4. Very stony

5th Digit - Rock Exposure
1. Little or no rock exposure
2. Limited rock exposure
3. Considerable rock exposure
4. Excessive rock exposure
5. Rock exposure (barren)

6th Digit - Soil Depth
1. Deep (6 ft. or more)
2. Moderately Deep (3 ft. to 6 ft.)
3. Shallow (1 ft. to 3 ft.)
4. Very shallow (less than 1 ft.)

7th Digit - Soil Fertility
1. Exceptionally fertile
2. Fertile
3. Moderately fertile
4. Low in fertility
5. Very low in fertility

TABLE

This table shows the major land uses or human items on the basis of which the homogeneous land uses are delineated, as noted by the digits in the numerator of the long fraction. The table classifies the human or cultural features, with an agricultural emphasis of course.

1st Digit - Major Land Use
1. General farming
2. Animal industry
3. Cash crop farming
4. Part time farming
5. Subsistance farming
6. Forest land
7. Recreational area
8. Rural village area
9. Urban area
10. Manufacturing or mining areas

2nd Digit - Agricultural emphasis
A - Corn
G - Grain
B - Beef cattle
D - Dairying
S - Sheep
H - Hogs
M - Mules or horses
P - Poultry
T - Tobacco
C - Cotton
W - Truck Gardening
O - Orchard
N - No emphasis
F - Forage

3rd Digit - Field Size
1. Large
2. Medium
3. Small
4. Very small

4th Digit - Amount of Idle Land
1. Little
2. Limited
3. Considerable
4. Excessive

5th Digit - Quality of Farmsteads and Equipment
1. Excellent
2. Good
3. Medium
4. Poor
5. Very poor

TABLE

This table shows the land classified on the basis of the agricultural quality of the present physical conditions of the land, as noted by the denominator of the short fraction.

Class I - Units of 200 acres or more that are characterized by the following physical indexes appearing individually or in combination.
1. Relatively level or moderately undulating surface
2. Adequate or thorough drainage
3. Little or no observable errosion
4. Deep stone free soil of exceptional fertility.
5. Little or no rock exposure.

Class II - Units of 200 acres or more.....
1. Relatively level to undulating surface
2. Adequate or thorough drainage
3. Little denudation by errosion
4. Deep fertile soils free from stone.
5. Limited rock exposure.

Class III - Units of 200 acres or more.....
1. Undulating to moderately hilly suface
2. Adequate or thorough drainage
3. Denudation by sheet errosion or moderate gullying to a stage at which errosion control is economically feasible.
4. Soils of moderate fertility and stoniness.
5. Limited rock exposure.

Class IV - Units of 200 acres or more.....
1. Hilly surface
2. Poor or excessive drainage
3. Denudation by sheet errosion or gully errosion to a depth that renders cultivation difficult.
4. Shallow stony soils low in fertility
5. Considerable rock exposure.

Class V - Units of 200 acres or more.....
1. Steep slopes
2. Very poor or excessive drainage.
3. Denudation by sheet or gully errosion beyond the point of cultivation and economically feasible rehabilitation other than by reforestration.
4. Shallow stony soils very low in fertility.
5. Excessive rock exposure.

TABLE

This table shows the quality of the present agricultural use, as noted by the numerator of the short fraction.

Class I - 1. Medium and/or large uninterrupted fields
2. Fields free from weedy or brushy cover.
3. Little or no idle land.
4. Excellent farmsteads and farm equipment.
5. Any other evidence of an excellent standard of living.

Class II - 1. Medium and/or large uninterrupted fields
2. Fields largely free from weedy or brushy cover
3. Little or no Idle land
4. Good farmsteads and farm equipment
5. Any other evidence of a good standard of living

Class III - 1. Small and/or medium uninterrupted fields
2. Limited weedy or brushy cover.
3. Considerable idle land
4. Medium quality farmsteads
5. Any other evidence of a medium standard of living.

Class IV - 1. Small and/or interrupted fields
2. Heavy or weedy or brushy cover
3. Considerable idle land
4. Poor farmsteads
5. Any other evidence of a moderately low standard of living

Class V - 1. Very small and/or interrupted fields
2. Sparse weedy or brushy cover
3. Excessive amount of idle land.
4. Very poor farmsteads and equipment.
5. Any other evidence of a very low standard of living.

TABLE

This table shows the land classified on the basis of the economic status of the people and the physical conditions of the land according to the severity or absence of problems and needs for readjustments, as noted by the Roman numeral, which is more or less a summary of the accompanying short and long fractions.

Class I - Units in which no significant agricultural problems are apparant. These units are characterized by an excellent standard of living and by land that is exceptionally well suited for both general and specialized types of agriculture. Color: Blue

Class II - Units in which the apparant agricultural problems are not critical. These problems, in most cases, can be solved readily by programs of education and demonstration. These units are characterized by a good standard of living and by land that is well suited for both general and specialized types of agriculture. Color: Green

Class III- Units in which agricultural problems are moderately critical. These problems, in most cases, can be solved by intensive programs of education and demonstration. These units are characterized by a medium standard of living. Only land that can be used for general and for specialized crops are possible under proper management. Color: Brown.

Class IV - Units in which agricultural problems are very critical. Some of these problems may be solved through intensive programs of education and demonstration, but most of them will require a marked readjustment and/or a reorientation of economic activities. These units are characterized by a moderately low standard of living and by land which is for the most part unsuited for cultivated crops. Color: Yellow

Class V - Units that in most cases are suitable only for forest use. Some areas may prove of value for recreational purposes, game preserves, etc.; some might be truly waste land. These units are characterized by a very low standard of living and the land in most cases is virtually unsuitable for agricultural purposes. Color: Red

Remark: Non-agricultural land would be left uncolored.

MAPPING FOR PLANNING

LAND USE MAPS

The following methods for classifying and mapping existing land uses are presented with the assumption that adequate base maps are already available and that information has been collected describing the present use of every structure and of every parcel of real property in the area to be surveyed, and that the immediate problem is to classify each use into a specific functional category and indicate the existence of that function by its location on a map. The general principles upon which these functional categories were determined are described below. Reference to the alphabetical listing of land uses also will help to clarify the general principles followed in making certain classifications by providing specific examples of their application to typical land uses.

RESIDENTIAL LAND USES

The single-family (SF) category includes only those dwelling units occupied by one family and its servants comprising a household unit. Where two or more individual single-family dwellings are located on the same lot or property they are to be indicated as single-family dwellings, and the distinction between lots occupied by one-family dwelling or single-family dwellings should be made in another study.

Two-family (2F) dwelling units are to be indicated in the two-family category.

Three- and four-family (34F) dwelling units are to be indicated in the 3-4-family category.

This applies generally where two-, three-, or four-family units are either duplex, side-by-side type, or flat (one family over the other) type. An exception to this rule is found where duplex or flat units for two to four families are part of a public or private housing project where they are served by common facilities, such as parking areas, public utilities, common central heating services, community play areas and buildings, and are operated as integral parts of such a housing project. This would not apply, however, to the "brown-stone front" type of housing, where single-family units, which are otherwise completely independent as to ownership, occupancy, and use of utilities, share common party walls, but are in all other respects single-family units.

Multiple dwellings (APT) shall include all such residential units not otherwise classified by these provisions.

Boarding houses and rooming houses (BH) shall include all such residential structures which publicaly advertise themselves to be boarding or rooming houses by the display of signs or other means of advertising or where the major portion of the structure is devoted to the accomodation of boarders or roomers on a fairly permanent basis, the rentals from which are obviously largely, if not entirely, responsible for the maintainance and operation of the structure and for providing the livelihood of the person or persons operating the establishment. It is usually not feasible to include these boarders taken in by families to partialy spplement their income in a household where the facilities of the household are primarily used for the accomodation as a home and residence of the family operating the establishment.

Tourist courts, tourist homes, and trailer courts (T) which advertise their accomodations as being for transients primarily, and which are usually characterized by their provision of shelter complete with the necessary household furniture, and cleaning, custodial, and maid service at daily or weekly rates, shall be included in the tourist category with any distinction between them on the basis of permanence or extent of activity being indicated by variation in the use of the color symbols on the map. (Tourist courts, tourist homes, or bungalow courts which consist of permaneat structures erected for the accomodation of automobile transported tourists, and which provide transient accomodation should be indicated by solid color within the area occupied by them. Trailer courts, as typical temporary open land use, should be indicated by a band of color surrounding the property withthe interior portion remaining blank as an indication that vacant land is being devoted to use where only limited permanent structures or installations exist for such a use.) Where it is difficult to determine whether an establishment is a rooming house or a tourist home for transients it should be classified in the tourist category.

Hotels (H) and apartment hotels should include all structures commonly known by these terms where facilities are provided for transient or semi-permanent guests, but which afford no, or only limited, cooking facilities and where some cleaning and housekeeping services are furnished by the management.

BUSINESS, COMMERCIAL, AND INDUSTRIAL USES

While all common business, commercial, and industrial activities, as well as public and quasi-public land uses are classified in the detailed alphabetical listing of such uses, the following general principles apply in the classification of most individual uses into these categories.

Local (neighborhood) business (LB) shall be deemed to include only such business activities as provide necessary services for the day-to-day operation of a household and which are most frequently visited by the housewife. They include such business establishments as grocery stores, retail butcher shops, delicatessen stores, bakery shops where no baking is done on the premises, barber shops and beauty parlors, small tailor shops catering to custom tailoring and minor cleaning and pressing activities, drug stores and the like.

It is often desirable to destinguish between a local neighborhood service store which deals with a clientele which reaches the store primarily on foot and the large supermarket type of establishment where the customer buys in bulk, usually transporting his purchases home in his automobile. This destinction is best made as a separate study to avoid confusion in classifying essentially alike uses in terms of their scale of operations. Where doubt exists whether a business is of a local or neighborhood character or not the distinction can be made between the local business use which can be supported economicaly by a small neighborhood area and general or other business activity which depends upon a city-wide clientele for its patronage.

Home activities (HB) can be generally classifed as local business or office uses, although there are occasionally light industrial activities included among them. The alphabatical will distinguish those which may require special study, or special handling in a zoning ordinance.

The category of offices and banks (OB) should include all professional and business offices such as real estate offices, insurance broker's offices, and similar activities employing a predominately white-colar clerical staff which is not engaged in retail sales on the premises of articals or products of a tangible nature and where no heavy or noisy machinery is utilized in the operation of the business. Doctors' and dentists' offices and other related semi-professional activities , such as chiropracters, etc., are included. Offices in the residences of the individuals so engaged should be included, although a distinctive method of indicating offices in the home is suggested. Such activities as clinics or nursing homes should not be included in this category.

The general business (GB) category should include all business and commercial activities not otherwise classified in the three other categories which can be broadly classified as the large service activities, and which depend upon the city as a whole to support them. It should be noted that several uses which are commonly included in the downtown or general business category should be excluded from this category and included in the light industrial area. Examples of such uses which are best included in the industrial category are animal hospitals, automobile junk yards and wrecking yards, small fabrication plants such as tinsmiths' shops and small factories where articals are actually manufactured for retail sale either on the premises or in small quantities for distribution elsewhere and which are potential nuisances or contribute to the concentration of traffic or people or to the fire hazard.

The intensive business (IB) area category is meant to include retail business services or commercial activities which because of their nature, and partiaularly because of the service they give to the public, cannot be classed as light industrial, but which, nevertheless, because of their tendency to encourage traffic conjestion and parking problems, or because of certain inherent dangers which create special problems are best distinguished from ordinary business and commercial activities by placing them in a separate category. These intensive uses include gasoline stations and automotive service facilities patronized by large groups of the public which induce traffic conjestion or are characterized by fire hazard; theatres,for similar reasons; amusement facilities such as amusement arcades or parks, bowling alleys, and bars which encourage crowds of people which are noisy and often objected to on moral grounds and are also causes of increased fire hazards; and similar activities which are listed as intensive business activities in the alphabetical list of land uses.

The light industrial (LM) areasinclude those warehouse uses and light industrial uses customarily so classified whch produce some noise, traffic conjestion, or danger, but which are of such a scale or character that they present no serious hazard to neighboring properties either from fire, smoke, noise, or odors. Consideration is given to including certain industries of a large scale which, because of their character and method of operation, are clean, quiet, and can be properly cushioned from the residential area by planting or park strip. Thus they may provide employment within a short walking distance of the residential area itself. Often a distinction can be made between the actual primary manufacturing of a product as a heavy industrial process and the fabrication, assembly,

storage, or packaging of the same product as a light industrial process. An example of this would be sheet steel, the production of which is a heavy industrial process, in contrast with the fabrication of sheet steel products such as tinsmith work or custom-built ventilating units, which can be classified as light industrial work.

A distinction is made in separating public utilities and railroads (PM) from other industrial uses because the ability of these utilities to serve the needs of the public sometimes is dependent upon their being located in or imediately adjacent to a residential area. It is felt that proper design and regulation of such facilities, both self imposed (as is customary with telephone exchange buildings) and by ordinance where necessary, make it possible to distinguish these uses from similar activities of an industrial or light industrial nature conducted by private enterprise in general.

Public utility offices which are engaged in purely clerical operations and where no repair, operational, or service facilities are centered, or for which are not depot areas for the concentration of passengers for transportation should be classified as offices. The gas, electric, or telephone offices where bills are paid are an example. Commercial airplane offices where passengers are picked up for transportation to airports, however, should be classified as depots in the same manner as railroad stations.

Properties owned by public utility companies which are used for other than public utility uses should be classified according to the actual use made of the property, regardless of ownership. Thus, property owned by a railroad but used as farmland should be classified in the appropriate agricultural category.

The heavy industrial (HM) category is that which is customarily used in describing all industrial activities which may be of a dangerous or nuisance-producing character. Reference should be made to the alphabetical list of land uses appended hereto where doubt arises regarding classification of specific industrial activities.

Public or quasi-public (P) & (QP) uses include all governmental functions, public institutional buildings, and quasi-public institutions such as charitable organizations, churches, private schools, golf clubs, cemetaries, lodge halls and fraternal organizations, and the like. Distinction should be made between those operations which are financed by public funds and operated as part of the governmental function (P) and those which are operated by private individuals or groups of individuals for a public purpose, but with only limited public control or accessibility (QP).

While similar functions are often performed by public agencies, charitable or philanthropic institutions, and profit seeking private enterprize, it is usually desirable to distinguish among the activities of these different operating agencies, however, alike their actual operations may be on a purely functional basis, because of factors which (A) limit the accessibility of these services to the general public, which (B) control the sale or disposal of land or structures so occupied, or (C) because of the fact that they are in some cases operated for private gain. The following text suggests devices whereby similarity of function may be indicated and the character of the operating agency distinguished as well.

Except in predominantly ruralareas where highly specialized agricultural persuits exist, agricultural land can generally be classified, either into crop land uses (AC) which may or may not be subdivided into orchard land and truck garden land uses, or into dairy and livestock production (AL) where a further diferentiation may be made between cattle and sheep raising and the raising of smaller livestock such as poultry. Some distinction is occasionally desirable with regard to forest land, but where such areas are national forests or provincial or dominion parks they should be classified as public parks.

It will be noted that no color category is established for mining (E) or other activities of extractive nature. These activities should be distinguished from the common types of industrial activity as they depend upon the existence of natural resources which exert controls over their location which do not apply to industrial activities in general. While these land uses are less frequently found in predominately urban areas and while difficulty often arisea in indicating such activities where they extend below the ground underneath other surface activities, where such activities exist and must be mapped a suitable general category such as industrial or vacant land use category may be used with any necessary distinction made by the use of appropriate cross-hatching added over the color symbol. Abandoned mines or quarries may be shown as vacant land uses and an appropriate symbol may be added, if desired, to indicate them to be special problems.

Where several activities are found on the same parcel of land which can be classified under several categories of land use but where all these activities form part of the major activity on the land, they should should all be classified as being part of the major land use. For example, a building contracting enterprise may occupy a large area of land with many different activities which include office space, an open storage yard, a warehouse, a garage and repair shop, etc. This land shoul be classified as a building contractors yard and

warehouse under the light industrial classification in spite of the fact that certain portions of it are devoted to less intensive activities such as the office area or the storage garage. All land uses which are incidental to the operation of the pricipal land use should be classified as being part of that land use.

Where it is difficult to determine which of the two or more land uses is the principal land use, the land should be classified in the more intensive, dangerous, or otherwise detrimental category of land use. A possible exception to this rule would be found in the agricultural areas where it is possible to distinguish between crop land uses and livestock land uses and indicate the uses upon a map. It may also be desirable where large areas are involved to make a distinction between a small area occupied by structures and a relatively large area occupied by open land uses. An example of this would be a sawmill or woodworking establishment which occupies a small portion of an area with structures engaged in processing wood or manufacturing operations and uses the rest of its property for the outdoor storage of lumber. In such a case it may prove worthwhile to distinguish between these two uses in the mapping. On the other hand, normal farm activities often include activities which are generally classified as industrial, such as milling, livestock slaughtering, and cider or vinegar manufacturing. When supplimental to normal farm operations these activities are to be considered agricultural land uses. In all instances, however, a definite and consistant policy should be adhered to if this is done.

LAND USE MAP PREPARATION

Method for applying color and symbols in mapping land uses

GENERAL PROCEDURES

Where the entire lot is devoted to one type of land use show entire area in that single ownership in solid color

Where a lot is divided between two or more uses show actual area devoted to each use.

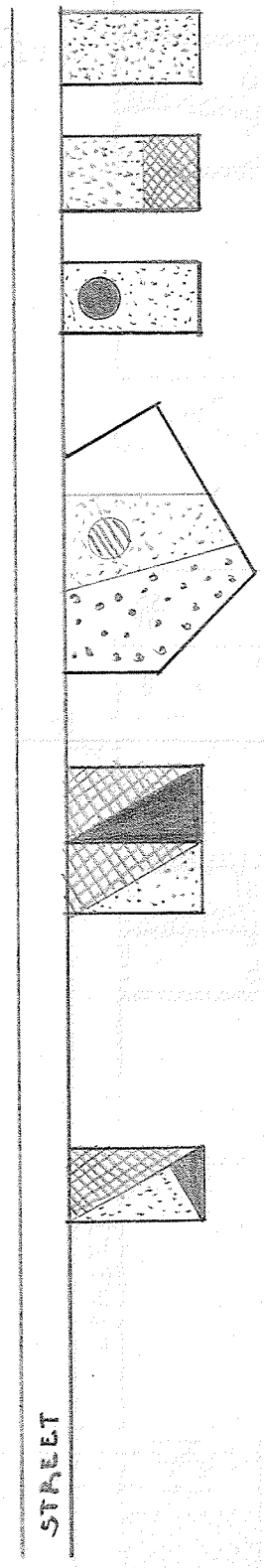
Indicate a home industry or office within the main residential dwelling by a spot of the appropriate color within the appropriate residential color for the entire lot.

Where the exact portion of a large tract of land which is devoted in part to residential use is difficult to determine, a case which occurs most frequently in suburban and rural areas, show the residential uses as appropriately colored circle spots of convenient and uniform size and indicate the use of the rest of the property appropriately.

Where different uses exist on the first and upper floors of the structure, indicate them by dividing the lot by a diagonal line, the first floor use being indicated in the triangle which has the street frontage of the lot as one of its sides and the second story-use being indicated by the appropriate color in the remaining area. As a general rule, show the second story use only and omit indication of any of the upper-story uses.

However, in some special studies it occasionally it is desirable to indicate a third-story use where it differs from either the first- or second-story use. This can be done by further dividing the triangular area in which is indicated the second-story use by a line bisecting the right angle of the triangular space, the third floor use being indicated in the appropriate color in the triangular area which has the rear lot line as one of its sides. Where lots are not rectangular in shape these principles

EXAMPLE *



LAND USE

may be applied generally. The judgement or ingenuity of the draftsman must be relied upon in such cases, but a uniform method of indication must be followed whenever such special handling is necessary.

OPEN LAND USES

Where the use indicated is primarily a use only with small or no structural facilities, indicate by a band of the appropriate color along the lot lines, leaving the center area blank (eg. -parking lots, commercial tennis courts etc.). An exception is found in agricultural land use where appropriate color symbols are provided.

VACANT STRUCTURES

Vacant structures should be indicated by intersecting diagonal lines in the lot occupied by the structure.

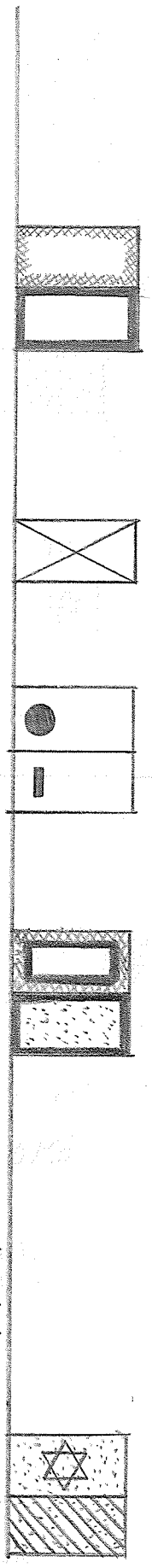
SPECIAL CASES

Where small structures (such as gas pumps, shoeshine stands, or watchmans shacks) are erected as part of an open land use, indicate by dots of color of convenient and uniform size. Indicate outdoor advertising signs (commercial signs not advertising the use on the premises) as a short bar in an otherwise vacant area.

Where a governmental agency conducts the business or residential use is operated or on which is a normally privately operated business, indicate this by a band of color indicating governmental land use around the appropriate color indication in the center of the lot, which indicates the actual land use.

Private or parochial schools which function in the same manner as public schools should be indicated by a band of the color indication used for quasi-public institutions surrounding the color indication for schools. As reference to the alphabetical listing will indicate, certain commercial types of "schools" (eg. -auto driving schools, etc.) should not be classed as educational institutions, but as business enterprises.

Where desired, indication by symbol or cross-hatching may supplement the color indication for further definition of land use.



Where it is necessary that a government operated housing project be distinguished from other multiple dwelling land uses, the indication for multiple dwelling uses may be banded by the appropriate color indicating government ownership.

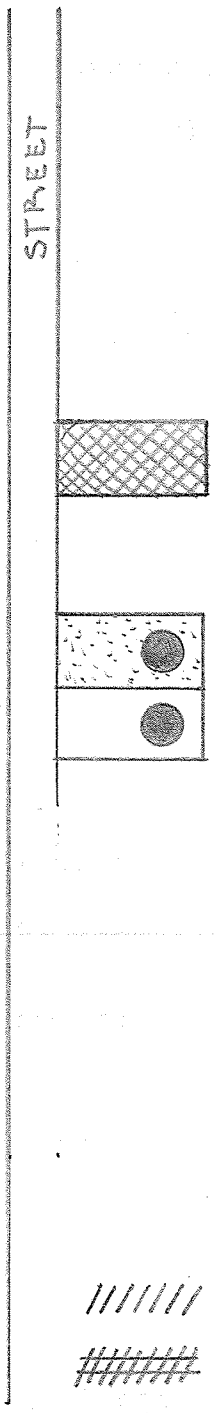
Where it is desirable to indicate resort or guest (dude) ranch land use from other ranch uses the agricultural livestock land use color may be banded by the color indication for resort or hotel land use.

Dump heaps, abandoned quarries, or waste land which must be filled in or drained before it can be used may be indicated by a light cross-hatch only, the ommision of color indicating the land to be vacant.

Single house trailers in rear yards of residential (or other) properties or on vacant lots which are obviously of a transient nature may be indicated by a spot of the color for trailer or tourist camp land use.

In preparing county or regional land use maps it is often desirable to distinguish among the various types of agricultural activities, particularly between those of a permanent or continuing character such as woodlands and orchards in contrast with crop or pasture lands which are often subject to annual changes. Hence in addition to using the "Cropland - AC" and "Livestock land - AL" categories, a third category of "Woodlands - AW" may be useful. Distinction can be made by:

(a) using solid color for densely wooded areas.
(b) using a single-line hatching for scrub woods or second growth.
and(c) using a double-line intersecting hatch for orchards or nursuries.



* No color scale or symbolism is represented in these illustrations: non-symbolic hatching or shading is used in place of color (same hatching etc, might be used for different land uses in different illustrations).

Where several planning agencies or draughtsmen are working together on maps for land use , the following color legends have been drawn up to insure uniformity of presentation. Pencils should be used at full weight with no use of shading. Note that all commercial uses are in shades of red, institutions in blue, etc. For best photographic reproduction of maps stick to black and white hatch presentation.

LAND USE CATEGORIES

Category		Pencil description: Prismacolor	Dixon's Thinex
RESIDENTIAL			
Single-family	SF	9I5 Lemon yellow	374
2-family	2F	939 Flesh (or 942)	388
3- and 4-family	34F	9I7 Yellow orange	372
Boarding and rooming houses	BH	943 Burnt ochre	428
Multiple dwelling (over 4F)	APT	946 Dark brown	378
Tourists and trailer courts	T	930 Magenta	370
Hotel	H	93I Purple	396
BUSINESS & COMMERCIAL			
Local (neighborhood) business	LB	929 Pink	38I
Offices & banks	OB	92I Vermilion red	37I
General business	GB	923 Scarlet lake	383
Intensive business, theatres, recreation	IB	925 Crimson lake	369
INDUSTRIAL			
Light industry	LM	937 Light grey	399
Railroads & public utilities	PM	936 Dark grey	432
Heavy industry	HM	935 Black	379
PUBLIC			
Parks	P	9I0 Emerald Green	4I4
Public schools	P	909 Grass green	375
Public buildings	P	908 Dark green	380

QUASI-PUBLIC			
Quasi-public open uses	QP	903 True blue	4I8
Churches	QP	904 902 Ultrmarine	394
Quasi-public buildings & institutions	QP	90I Indigo blue	376
Cemetaries	QP	905 Aquamarine	393
AGRICULTURAL			
Crop land	AC	9I2 Apple green	389
Livestock land	AL	9II Olive green	39I
MINING	E	No color	
VACANT LAND	V	No color	

SIMPLIFIED SET OF LAND USE CATEGORIES

This less detailed list of land use categories will be found adequate in communities with simpler or less intensive patterns of development and also for presentation of a map at a smaller scale.

		P.C.	D.T.
RESIDENTIAL			
Single-family	SF	915 Lemon yellow	374
Intensive residential (combining 2- 3- 4- family & boarding houses)	BH	943 Burnt ochre	428
Multiple dwelling	APT	946 Dark brown	378
Hotel (& tourist & trailer courts)	HT	931 Purple	396
BUSINESS & COMMERCIAL			
Local (neighborhood) bus.	LB	929 Pink	381
General business (including offices, banks, & intensive business)	GB	923 Scarlet	383
INDUSTRIAL			
Light industry (including public utilities)	LM	937 Grey, light	399
Heavy industry	HM	935 Black	379
PUBLIC & QUASI-PUBLIC			
Parks	P	910 Emerald green	414
Schools & public buildings	P	909 Grass green	375
Quasi-public (open uses)	QP	903 True blue	418
Churches & institutional buildings	QP	901 Indigo blue	376
Cemeteries	QP	905 Aquamarine	393
AGRICULTURAL			
All types	AA	912 Apple green	389
VACANT LAND	V	No color	

LAND AND IMPROVEMENT VALUES

The assessed land and improvement values below are developed from the relationship of the assessed value of land and/or of buildings to the area of the property by dividing the number of square feet of lot area into the assessed value of the property in dollars. The scale of values may be changed to meet local conditions affecting land values or assessment rates. A sampling of typical areas of development will reveal whether the scale has the necessary spread between values. Roughly the average value of each subdivision is double that of its preceeding subdivision. Where the scale is used to designate value of improvements per lot area unimproved property should not be colored at all.

The values are set up on a square foot basis rather than on a street frontage basis because of the greater ease in the establishment of values of corner lots having double frontages. It also makes possible the comparison of the value of the land with the value of the improvements thereon by the use of the same scale on the maps indicating each set of conditions

COLOR LEGEND FOR LAND VALUES

VALUES	P.C.	D.T.
$ 0.00 - $ 0.04	9I5 Lemon yellow	374
0.05 - 0.08	9I7 Yellow orange	388
0.09 - 0.I6	942 Yellow ochre	372
0.I7 - 0.25	9I2 Apple green	389
0.26 - 0.55	9II Olive green	39I
0.56 - I.00	909 Grass green	375
I.0I - 2.00	908 Dark green	380
2.0I - 4.00	90I Indigo blue	376
4.0I - 8.00	93I Purple	396
8.0I - Over	924 Crimson red	383
Not assessed	937 Light grey	399

SQUARE FEET OF LOT AREA PER FAMILY

Amap indicating the number of square feet of lot area per family gives a general indication of the density of population as it defines various areas and, in indicating in general the prevailing lot sizes per family, provides a basic study for zoning. The standards and color scale are suggestions only as the prevailing paterns of lot sizes vary from one community to another. It should be noted that a color not in the ascending color scale (pink) is used to indicate the types of residential land uses (boarding and rooming houses) which are difficult to measure but where a relatively high density is probable.

COLOR LEGEND- LOT AREA PER FAMILY

NUMBER SQUARE FEET PER FAMILY	P.C.	D.T.
0 - I,000 Sq. Ft.	935 Black	379
I,000 - 2,000 " "	946 Dark brown	378
2,000 - 3,500 " "	944 Terracotta	383
3,500 - 5,000 " "	92I Vermilion red	428
5,000 - 6,500 " "	9I8 Orange	37I
6,500 - 8,000 " "	942 Yellow ochre	372
8,000 - I2,000" "	9I7 Yellow orange	388
I2,000 - Over " "	9I5 Lemon yellow	374
Occupied by rooming & boarding houses	929 Pink	38I

AGE OF BUILDINGS

For presenting the data in mapped form describing the age of structures, the following scale will be found to be generally applicable. Where special conditions exist its extent and subdivisions may be varied.

COLOR LEGEND FOR AGE OF BUILDINGS

BUILDING AGE CATEGORY	P.C.	D.T.
Under 5 years	9I5 Lemon yellow	374
Over 5 to I5 years	9I8 Orange	372
" I5 " 25 "	926 Carmen lake	383
" 25 " 35 "	93I Purple	396
" 35 years	90I Indigo blue	376

TAX DELINQUENCY OF REAL PROPERTY

Knowledge of the length of time real property has been tax delinquent is often an important factor in planning for community development. The following scale, while generally applicable, may require some adjustment to meet local conditions where the effects of existing statutes of limitations or the powers of the governmental agency to forclose and take title have direct relationship to the lenght of time the property can remain delinquent.

COLOR LEGEND FOR TAX DELINQUENCY OF REAL PROPERTY

TIME DELINQUENT	P.C.	D.T.
Over 0 to 2 years	9I5 Lemon yellow	374
" 2 " 5 "	939 Flesh	388
" 5 " I0 "	943 Burnt ochre	428
" I0 " I5 "	946 Dark brown	378
" I5 years	935 Black	379
Tax exempt property (private & institutional)	929 Pink	38I
Publicaly owned property	9I0 Emerald green	4I4

TAX DELINQUENCY OF REAL PROPERTY

Knowledge of the length of time real property has been tax delinquent is often an important factor in planning for community development. The following scale, while generally applicable, may require some adjustment to meet local conditions where the effects of existing statutes of limitations or the powers of the governmental agency to forclose and take title have direct relationship to the lenght of time the property can remain delinquent.

COLOR LEGEND FOR TAX DELINQUENCY OF REAL PROPERTY

TIME DELINQUENT	P.C.	D.T.
Over 0 to 2 years	9I5 Lemon yellow	374
" 2 " 5 "	939 Flesh	388
" 5 " I0 "	943 Burnt ochre	428
" I0 " I5 "	946 Dark brown	378
" I5 years	935 Black	379
Tax exempt property (private & institutional)	929 Pink	38I
Publicaly owned property	9I0 Emerald green	4I4

PLANNIN

LAND USE

PLANNIN

LAND USE

PLANNIN

ABBREVIATIONS OF CLASSIFICATIONS OF LAND USES.

HM	Abatoirs
HM	Abrasives Mfg.
OB	Abstractors
IB	Academy, Dancing
AL & IB	Academy, Riding
OB	Accountants
HM	Acetylene Mfg.
HM	Acetylene Storage
HM	Acid Mfg.
HM	Acoustical Material Mfg.
LM	Acoustical Material Storage
	Adding Machines (See Business Machines)
	Addressing & Mailing Service (See Office Service)
OB	Adjusters
LM	Advertising Display Mfg.
OB	Advertising Offices, Agencies
GB	Advertising Photography Studios
IB	Advertising Signs, Outdoor
	Agricultural Implements
GB	Distribution & Display
HM	Manufacturing
LM	Repair & Service
GB	Sales
	Agricultural Operations (See Farmland")
LM	Agricultural Tillage, Contractors
	Air Conditioning Equipment
LM	Custom Fabrication & Installation
HM	Mass Unit Production
GB	Air Express Service
IB	Air Express Service Garage
LM	Air Express Service Warehouse
PM	Airline Companies Office
	Airplane (See Airports Also)
PM	Beacons
HM	Manufacture
PM	Markers
LM	Repair & Storage
GB	Sales & Display
QP	Airplane Ground Schools
GB	Airplane Parts Sales
QP	Airports - Private
P	Airports - Public
	Aluminum Mfg. (See Metals)
IB	Ambulance Service Garages
GB	Ambulance Service Office
HM	Ammonia Mfg.
HM	Ammonia Storage
HM	Ammunition Mfg.
IB	Amphitheatre (Commercial)
P	Amphitheatre (Municipal)
IB	Amusement Arcades
IB	Ammusement Parks
HM	Aniline Color or Dye Mfg.

LM	Animal Boarding
AL or LM	Animal Breeding (Pets)
LM	Animal Hospitals
GB	Antiques, Sales
H	Apartment Hotels
APT	Apartments
AL	Apiary (Bees)
OB	Appraisers
P	Aquarium
OB	Architects
GB	Architects Supplies
IB	Armored Car Service Garage
OB	Armored Car Service Office
P	Armory
GB	Army, Navy, or Airforce Goods Sales
P	Army, Navy, or Airforce Installations
P	Arsenal, Government Property
GB	Art Gallery, Commercial Sales
P	Art Museum, Municipal
QP	Art Museum, Private
(HB) LM	Art Needle Work
OB	Art School,Commercial
QP	Art School Institute
(HB) LM	Artificial Flower Mfg.
LM	Artificial Limbs Mfg.
GB	Artificial Limbs Sales & Service
OB	Artists, Commercial & Display
GB	Artists, Materials & Supplies
HM	Asbestos, Mfg.
LM	Asbestos & Asbestos Products, Storage
GB	Asbestos Products, Sales
V"	Ash Dumps"
HM	Asphalt & Asphalt Products Processing
LM	Asphalt Siding, Shingles, Roofing - Storage
(HB)	Assayers (See Laboratory)
QP	Assembly Halls
QP	Associations, Clubs & Lodges (Private)
QP	Asylums - Private
P	Asylums - Public
QP	Athletic Clubs
QP	Athletic Fields - Private Property
P	Athletic Fields - City Property
GB	Auctioneers
GB	Auctioneers' Auditorium
QP	Auditorium - Private Institutional
P	Auditorium - Public
IB	Auditorium - Theatres & Commercial
T	Auto Courts
OB	Autographic Registers
	Automobiles
LM	Assembly
GB	Bodies, Sales (New)
LM	Bodies, Sales (Used)
IB	Garages, Drive-yourself
IB	Garages, Public
HM	Manufacture

	Automobiles (Cont'd)
IB	Outdoor Sales Lots
IB	Parking
GB	Parts & Supplies (New)
LM	Parts & Supplies (Used)
IB	Rentals (Garage)
LM	Repair- Brakes, Electrical, Painting, Radiators, Upholstering, Etc.
IB	Sales from Outdoor Lots
GB	Sales from Show Rooms
LM	Salvage
IB	Service Station
GB	Show Rooms
LM	Storage - Dead (Warehouse)
IB	Storage - Live
GB	Baby Shops
HM	Bag Cleaning
HM	Bag Jobbers (Burlap)
	Baggage (See Express) Warehouse
HM	Bags, Burlap Mfg.
HM	Bags, Paper Mfg.
LM	Bakers & Baked Goods Mfg.
LB	Bakers & Baked Goods, Sales
IB	Ball Park
IB	Ball Rooms
HM	Balls & Bearings Mfg.
GB	Balls & Bearings, Sales
LM	Balls & Bearings, Storage
P	Band Shell
	Bank Equipment Mfg. (See Metals)
OB	Banks & Trust Companies
LM	Barbeque, Bulk Preparation & Sales
IB	Barbecue, Stand - Roadside Sales
LB	Barbers
GB	Barbers' Supplies, Distributors and Dealers
IB	Barge, Gasoline, Retail Sales
	Barge Terminal - Private (See under Industry it serves)
P	Barge Teminal - Public
HM	Barrel Mfg. (Metal) - (SEE Metal)
IB	Barrel Mfg., Wood
IB	Bars,(Selling Liguor)
P	Baseball Park - Private
IB	Baseball Park - Public
GB	Bath House, Private Commercial
HM	Bathroom Accesseries Display & Sales
P,QP,E	Bathroom Accesseries Mfg.
P	Baths, Mineral Springs
GB	Baths, Public
LM	Baths, Turkish (Private)
IB	Battery Service
	Beach - Private Commercial

P	Beach - Public
	Bearings (See Balls & Bearings)
GB	Beauty Culture Schools
GB	Beauty Shop Equipment Sales
LB	Beauty Shops
	Bed Mfg. (See Furniture Mfg.)
HM	Beer, Brewing
LM	Beer & Ale Distributor, Wholesale & Storage
IB	Beer Parlors
HM	Beet Sugar Mfg.
LM	Belting, Repairing
HM	Belting Mfg.
LM	Beverages, Bottling
LM	Beverages, Wholesale & Storage
QP	Bible Institute
GB	Bibles, Sales
	Bicycles Mfg. (See Metals)
LM	Bicycles, Repair
GB	Bicycles, Sales
IB	Billboards"
IB	Billiard Parlors
	Billing Machines (See Business Machines)
	Biologics (See Drugs)
	Bird Hospitals (See Animal Hospitals)
LM	Biscuit Companies, Mfg.
LM	Biscuits, Wholesale & Storage
LM	Blacksmiths
HM	Blast Furnaces
HM	Bleacheries, Cloth Processing
HM	Bleaching Compound Mfg.
QP	Blind Peoples Home, Private
P	Blind Peoples Home, Public
QP	Blood Banks
	Blooming Mill (See Metals)
	Blower & Blower Systems (See Air Conditioning)
GB	Blue Printing
HM	Blueing Mfg.
IB	Boardwalk, Amusement, Commercial
LM	Boat, Pleasure, Storage
QP	Boat Club
HM	Boat Mfg.
HM	Boilers Mfg.
LM	Boilers Repairing
GB	Boilers Sales
LM	Boilers Storage
HM	Bolts & Nuts, Mfg.
GB	Bolts & Nuts, Sales (Hdw)
OB	Bonding Companies
HM	Bones - Reduction or Distillation
LM	Bookbinders
	Bookkeeping Machine Sales (See Business Machines)
OB	Book Publishing, Offices
LM	Book Publishing, Printing
GB	Booksellers
	Boots (See Shoes)
P	Botanical Gardens

HM	Bottle Mfg.
HM	Bottle Caps & Seals, Mfg.
GB	Bottle Caps & Seals, Sales
HM	Bottled Gas Mfg,
HM	Bottled Gas, Storage & Distribution
LM	Bottles, Wholesale
IB	Bowling Alleys
HM	Boxes, Paper Mfg.
LM	Boxes, Sales
HM	Boxes, Wood Mfg.
LM	Braces, Orthopedic, Mfg.
GB	Braces, Orthopedic, Sales
HM	Brake Lining Mfg.
	Brakes (See Automobiles)
	Brass Foundry (See Metals)
HM	Breweries
HM	Brick Kilns
LM	Brick Storage
PM	Broadcasting Station
PM	Broadcasting Studio
OB	Brokerage House
	Bronze Mfg. (See Metals)
LM	Brooms, Mfg.
HM	Brushes, Mfg.
GB	Brushes, Sales
	Buffets (See Restaurants)
HM	Buggy Mfg.
LM	Building Contractors, Equipment & Material Storage
OB	Building Contractors' Offices
OB	Building & Loan Associations
LM	Building Materials, Wholesale and Storage
OB	Buildings, Office
	Bungalow Courts (For Transients see Tourist Courts For Permanent Residents see Apartments)
LM	Burglar Alarm Systems, Installation
GB	Burglar Alarm Watching Service
HM	Burlap Processing
PM	Bus Line Depots
LM	Bus Line Shops, Garage, Repair
	Business in Back Yard (See Particular Business Operation)
OB	Business College - Private
	Business Machines
GB	Distribution & Sales
LM or HM	Manufacturing (Depending on Nuisance or Danger)
LM	Repair & Service
LM	Storage & Wholesale
HM	Butane Distributors
HM	Butane Mfg., Sales & Storage
LB	Butcher Shops
GB	Butchers' Supplies Sales
HM	Butter & Cheese Mfg.
LM	Button Covering (Fabrics)
HM	Button Mfg., Metal, Plasters

PLANNIN

LM	Cabinet Makers
GB	Cafes (Restaurants Only)
IB	Cafes (Selling Liquors)
	Calcimine (See Kalsomine)
GB	Camera Shop
	Can Mfg. (See Metals)
HM	Candle Mfg.
HM	Candy Mfg.
GB	Candy Shops, (Retail)
LM	Candy, Wholesale Distribution
HM	Cannery
LM	Canvas Goods (Fabrication)
GB	Canvas Goods, Sales
HM	Canvas Mfg.
	Caoutchouc Mfg. (See Rubber)
	Cap & Hat Mfg. (See Hats)
PM	Car Barns
	Car Manufacture (See Automobiles)
HM	Car Manufacture, Railroad
HM	Carbide Mfg.
HM	Carbide Sales & Distribution
HM	Carbonic Gas Mfg.
HM	Carbonic Gas Sales & Storage
HM	Carbonic Ice Bulk Sales & Distribution
HM	Carbonic Ice Mfg.
	Carbourators (See Automobiles)
GB	Carpenters, Contractors Office
LM	Carpenters, Shops and Power Woodworking
GB	Carpet Layers
HM	Carpet Mfg.
LM	Carpet & Rug Cleaners and Storage
LM	Carpets & Rugs, Warehouses
LM	Carpets & Rugs, Wholesale
HM	Carriage & Wagon Mfg.
	Cartage (See Freight)
HM	Carton Mfg.
HM	Casein Mfg.
	Cash Registers (See Business Machines)
HM	Caskets, Metal
GB	Caskets, Retail Sales
LM	Caskets, Wood Mfg.
HM	Cast Iron Pipe Mfg.
	Casters (See Bearings)
	Casting Foundry (See Metals)
LM	Cat & Dog Hospital
GB	Caterers
	Catholic School (See Schools)
HM	Cattle Shed"
HM	Caustic Soda Mfg.
HM	Celluloid Mfg.
HM	Cellulose Mfg.
HM	Cement Mfg.
LM	Cement Products Mfg. (Pipe, Blocks, Ect)
LM	Cement Storage
QP	Cemeteries

LM	Cesspool Builders & Service Equipment Yard
GB	Cesspool Builders & Service Offices
	Chair Mfg. (See Furniture)
GB	Chairs, Folding, Rental
GB	Chairs, Physiotherapy Sales
E,HM	Chalk Mfg.
GB	Chandler, Ships
HM	Charcoal Mfg. and Pulverising
QP	Charitable Institution
	Checkwriters & Checksigners (See Business Machines)
HM	Cheese Mfg.
HM	Chemicals & Drugs Mfg.
HM	Chemicals & Drugs Storage and Distribution
	Chemists, Analytical & Consulting (See Laboratories)
HM	Chewing Tobacco Mfg.
AL	Chicken Farm
QP	Child Care Centre and Play School
GB	Children's & Infant's Wear, Sales
LB	Chinese Laundry
(HB)OB	Chiropodists
(HB)OB	Chiropracters
HM	Chlorine Mfg
HM	Chocolate & Cocoa Products Mfg.
(HB)OB	Christian Science Practitioners
QP	Christian Science Reading Rooms
QP	Churches & Sunday School Buildings
HM	Cider & Vinegar Mfg."
LB	Cigar Stores
LM	Cigarette Mfg.
LM	Cigarette Service
(HB)GB	Cigars Mfg, Custom Hand Rolled
LM	Cigars Mfg., Machine Rolled
LM	Cigars, Wholesale & Storage
IB	Circus Grounds
AC	Citrus Groves & Ranches
P	City Buildings
HM	Clay Products, Mfg.
HM	Cleaning Compounds Mfg.
LM	Cleaning Compounds, Storage
LB	Cleaning & Dyeing Distribution Shops
LM	Cleaning & Dyeing Processing
QP	Clinics, Private
P	Clinics, Public
LM	Clock Factory
LM	Clothing, Mfg. Cloth, Weaving & Spinning HM
GB	Clothing, Retail
GB	Clothing, Wholesale & Distribution
QP	Clubs, Private, Social, or Fraternal
IB	Clubs, Supper & Amusement
HM	Coal & Coke Yards
E	Coal Mining"
HM	Coal Pocket
HM	Coal Tar Distillites or Products
IB	Cocktail Lounges
LM	Coffee, Wholesale & Storage
HM	Coffee Roasting

	Coffin Mfg (See Wood, Metals)
GB	Coin Dealers
LM	Coin Machines, Mfg.
LM	Coin Machines, Rental & Service
HM	Coke Ovens, Mfg.
LM	Cold Storage
P	Coliseum, City
IB	Coliseum, Private, Commercial
OB	Collection Agencies
QP	College, Private
P	College, Public
(HB)OB	Colonic Irrigation Clinic
P	Comfort Station
GB	Commissary Contractors
OB	Commission House, Office
QP	Community Centres
HM	Concrete (Bulk) Mfg.
LM	Concrete Contractors, Storage Yards
LM	Concrete Products (Pipes, Beams), Mfg.
LM	Concrete Products, Storage
LM	Concrete Transit Mixed
HM	Condensed Milk Mfg.
HM	Confectioners, Mfg.
LM	Confectioners, Wholesale
AC	Conservatory, Commercial, Botanical
	Conservatory, Musical (See Schools)
P	Consulates
HM	Container (Paper) Mfg.
LM	Contractors' Equipment,& Supplies, Storage
OB	Contractors' Office
GB	Contractors' Equipment & Supplies, Sales
	Convention Building (See Auditorium)
QP	Convents
GB	Conveyors, Sales
	Cooler Pads, Mfg. (See Air Conditioning)
	Coolers (See Air Conditioning)
HM	Cooperage Works
	Copper Mfg.(See Metals)
HM	Cordage Mill
P	Correctional Institution
	Coruggated Metal Mfg. (See Metals)
LM	Corsets & Brassieres, Mfg.
GB	Corsets & Brassieres, Sales
HM	Cosmetics Mfg.
GB	Costumes Rentals
HM	Cotton Bailing & Storing
HM	Cotton Ginning
HM	Cotton Seed Products, Mfg.
LM	Cotton Seed Products, Storage
HM	Cotton Spinning & Weaving
QP	Country Clubs
P	County Buildings
P	Courthouse
LM	Cranes, Storage Yard
	Creameries (See Dairy)

PLANNIN

OB	Credit Reporting Bureaus
OB	Credit Union Bureaus
HM	Crematories
HM	Creosote Treatment or Mfg.
HM	Crockery Mfg.
GB	Crockery Sales
LM	Crop Dusting Equipment Yards
	Culverts, Concrete (See Concrete Pipe)
GB	Curio Shops
	Curtain Cleaners (See Cleaning)
P	Custom House, Can.
	Cylinder Reboring & Regrinding (See Automobile Repair)
LM	Dairies, Distributing
LM	Dairies, Pasturization
LB	Dairies, Retail Sales of Products
HM	Dairy Equipment & Supply Mfg.
AL	Dairy Farm
AL,HM	Dairy Products Mfg.
LB	Dairy Products, Sales
IB	Dance Hall
(HB)IB	Dancing Instruction
	Dates (See Fruits)
HM	Dead Stock Collectors
GB	Decoration, Display Room & Office
LM	Decoration, Workshop & Equipment Yard
LB	Delicatessens
GB	Delivery Service Office
GB	Dental Laboratories
GB	Dental Supplies
(HB)OB	Dentists
GB	Department Stores
LM	Department Stores Warehouse
LM	Desks, Mfg.
GB	Desks, Sales
OB	Detective Agencies
P	Detention Home
HM	Dextrine Mfg.
LM	Diaper Supply Service
	Dictating Machines Sales (See Business Machines)
HM	Diesel Engines, Mfg.
LM	Diesel Engines Service, Equipment, & Supplies (Not Mfg.)
HM	Disinfectants, Mfg.
LM	Disinfectants, Storage & Wholesale
QP	Dispensary, Private Clinic
P	Dispensary, Public
LM	Display Designers & Builders' Shops
P	Disposal Plants, Sewage
HM	Distillation of Coal, Wood, Bones
HM	Distillers
LM	Distillers, Distribution, Warehouse

PLANNIN

IB	Distributing Service, Garages
IB	Dock, Amusement Pier
HM	Dock, Private Shipping Company
P	Dock, Public
	Dock, Serving an Industry (See Industry or Public Utility)
(HB)OB	Doctors' Offices
LM	Dog & Cat Hospitals
P	Dog Pound
GB	Dolls, Repairing
HM	Doors, Metal Mfg.
LM	Doors, Sash & Trim, Wood Mfg.
QP	Dormitory Buildings (Institutional)
P	Drainage Ways
LM	Draperies, Mfg
GB	Draperies, Sales
GB	Drawing Materials, Sales
GB(HB)	Dress Shop, Sales"
LB(HB)	Dressmakers, Custom"
GB	Drilling Companies Offices
LM	Drilling Company Equipment Yards
LB	Drive-in Markets
IB	Drive-in Restaurants
IB	Drive-in Theatres
IB	Driving Range, Golf
IB	Driving Schools, Auto
(HB)OB	Drugless Physicians
HM	Drugs, Mfg.
LB	Drugs, Retail Sale
LM	Drugs, Wholesale Storage
LB	Dry Cleaning Establishment (Depot only)
LM	Dry Cleaning Establishment, Bulk Processing
GB	Dry Goods
LM	Dry Goods, Wholesale & Storage
	Dry Ice Mfg. (See Carbonic Gas Mfg.)
HM	Dumps
	Duplicating Machines & Supplies (See Business Machines)
HM	Dyeing, Commercial, Bulk
HM	Dyestuffs, Mfg.
AL	Eggs, Poultry Farms
LM	Eggs, Storage & Processing
OB	Electric Contractors' Offices ------ Shops LM
LM	Electric Equipment, Assembly
HM	Electric Equipment, Mfg. (Casting & Molding)
GB	Electric Equipment, Sales
OB	Electric Light & Power Companies, Office & Building
PM	Electric Light & Power Companies, Yards
LM	Electric Plating
LM	Electric Refrigeration Lockers
LM	Electrical Appliances, Mfg.
LM	Electrical Appliances, Repairs
GB	Electrical Appliances, Sales
GB	Electrical Appliances, Wholesale

PLANNIN

	Electrolysis (See Beauty Shops & Electric Plating)
QP	Eleemosynary Building, Private
P	Eleemosynary Building; Public
HM	Elevators, Grain
HM	Elevators, Mfg.
IB	Embalming Establishment
P	Embassy
HM	Emery Cloth & Sandpaper Mfg,
OB	Employment Agencies
HM	Enamelling & Painting, Bulk Production
LM	Enamelling & Painting, Custom
HM	Engine Mfg.
OB	Engimeers
LM	Engravers
OB	Entertainment Bureaus
HM	Envelope Mfg.
HM	Excellsior Mfg.
HM	Excelsior, Storage & Distribution (Bulk)
IB	Exhibition Buildings, Commercial
P	Exhibition Buildings, Public
HM	Explosives Mfg.
HM	Explosives, Storage & Distribution
IB	Express Companies, Garages
OB	Express Companies, Office Only
LM	Express Companies, Warehouses
LM	Exterminating & Fumigating, Commercial Shops
HM	Exterminator & Insect Poison Mfg.
HM	Extrusion of Metals
	Fabrics, Synthetic (See Cellulose and Plastic Mfg., Artificial Leather)
HM	Fabrics, Weaving and Spinning
IB	Fairgrounds
LM	Farm Implements & Machinery Assembly
GB	Farm Implements & Machinery Sales
OB	Farm Labor Contractors
	Farmland"
AL	Apiary
AC	Crops (Field & Truck)
AL	Dairy
AC	Fruits (See Specific Fruit)
AL	Livestock
AC	Nursuries
AC	Orchards (Fruits & Nuts)
AL	Poultry
HM	Fat Rendering
P	Federal Offices
HM	Feed (Grains), Manufacture & Processing
GB	Feed, Retail, Distribution and Sales Office
LM	Feed, Wholesale & Storage
HM	Felt, Building, Insulation Mfg.
HM	Felt Fabric Mfg.
HM	Fences, Metal, Fabrication Mfg.
LM	Fences, Metal, Wholesale & Storage

PLANNIN

PM,P	Ferry Docks, Passenger"
PM	Ferry Docks, Railroad
HM	Fertilizers, Mfg.
AL,HM	Fertilizers, Natural, Storage
LM	Fertilizers, Processed, Storage Only
	Filing Equipment & Supplies Sales (See Office Equipment)
IB	Filling Station, Gasoline
LM	Filters, Fabrication
OB	Finance Companies, Loan Offices
HM	Fire Brick Mfg.
HM	Fire Clay Products Mfg.
LM	Fire Escape Contractors
GB	Fire Protection Equipment & Supplies, Sales
P	Fire Station
HM	Fireproofing, Mfg.
LM	Firewood, Storage
HM	Fireworks or Explosives, Mfg.
LM	Fish, Wholesale
HM	Fish Curing
P	Fish Hatchery, Provincial
P	Fish Markets, Public
LB	Fish Markets, Retail
HM	Fish Packing or Storage
	Fixture Mfg. (See Metals)
LM	Flags & Banners, Mfg.
APT	Flats (5 or more families)
HM	Floor Materials (Linoleums) Mfg.
GB	Floor Materials & Laying, Sales
HM	Floor Polish & Wax Mfg.
LM	Floor Refinishing, Contractors, Shop
AC	Florists, Greenhouses & Nursuries
LB	Florists, Sales
HM	Flour & Grain Storage & Elevators
HM	Flour Mills
LM	Food Processing (general), (See under product listing)
LM	Food Products, Brockers & Distributors
LB	Food Products, Retail Sales
LM	Food Products, Warehouse
AC	Forest Land"
P	Forests, ~~Natural~~ NATIONAL
HM	Forge Plants
P	Fort
HM	Foundries
QP	Fraternity Houses
PM	Freight Depot, Railroad (See Express Also)
LM	Freight Forwarders' Warehouses
OB	Freight Traffic Service Offices
LM	Frozen Foods, Processing
LM	Frozen Foods, Wholesale Storage & Distribution
LB	Fruit Stores, Retail
LM	Fruit & Vegetable Juice Processing
LB	Fruit & Vegetable Market, Retail
LM	Fruit &Vegetable Market, Wholesale
LM	Fruits & Vegetables, Processing (General, See under Product listing)

IB	Fuel Distributing Station, Gasoline
	Fuel Storage (See Product Stored)
IB	Funeral Directors
IB	Funeral Parlors, Homes
AL	Fur Farms
HM	Fur Preparation (Tanning)
LM	Fur Warehouse
	Furnace Mfg. (See Metals)
LM	Furnace, Cleaning & Repairing Shops
GB	Furnaces, Display & Sales
BH	Furnished Rooms
HM	Furniture, Bulk Mfg., Metal, Wood
LM	Furniture, Cleaners
GB	Furniture, Display & Sales
LM	Furniture, Repairing & Refinishing
GB	Furniture, Sales
GB	Furniture, Used
LM	Furniture, Wholesale & Storage
GB	Furs, Custom Cleaning, Remodelling, Repairing, and Storage.
LM	Furs, Mfg., Cutting & Assembly
GB	Furs, Retail Sales
P	Game Preserves
GB	Garage,Equipment, Sales
IB	Garage, Repair
IB	Garages, Public Storage
HM	Garbage, Reduction, Scavenging
LM	Garment Factory
GB	Gas, Appliances, Sales
HM	Gas, Bottled, Mfg.
HM	Gas, Butane, Mfg.
OB	Gas Companies Offices
IB	Gas Stations
HM	Gas Tanks, Illuminating
E	Gas Wells, Natural
PM	Gasholders, Illuminating Public Utility Company
HM	Gasoline, Bulk Storage Tanks
HM	Gasoline, Refineries
IB	Gasoline, Retail Sales
HM	Gelatin Mfg.
GB	Gift Shops
HM	Glass Blowing, Bulk Processing
(HB)LM	Glass Blowing, Custom
HM	Glass Mfg., Window & Plate
HM	Glucose Mfg.
HM	Glue & Fertilizer Mfg.
HM	Glue Size or Gelatin Mfg.
IB	Golf, Miniature
QP	Golf Clubs, Private
P	Golf Courses, Public
IB	Golf Practise Driving Range
P	Government Buildings

HM	Grain Elevator
HM	Graphite Mfg.
E	Gravel Pits
HM	Grease & Tallow Mfg.
AC	Greenhouses
HM	Grist Mill"
LB	Grocers, Retail
LM	Grocers, Warehouse
LM	Grocers, Wholesale
AC	Groves, Citrus
BH	Guest Homes
AL	Guest Ranches
HM	Gums, Wholesale Processing
HM	Gunpowder Mfg.
GB	Guns, Sales
LM	Gunsmiths, Repairs
HM	Gutta Perchas, Mfg.
IB	Gymnasiums, Private, Commercial
QP	Gymnasiums, Private Clubs or Institutional
P	Gymnasiums, Public
HM	Gypsum or Plaster of Paris Mfg.
HM	Hair Products Factory
(HB)LB	Hairdressing
QP	Halls, Assembly, Institutional
IB	Halls, Commercial
P	Halls, Public
LB	Hand Laundries, All Work on Premises (Chinese)
	Hangers (See Airport)
	Hardware, Mfg., (See Metals)
GB	Hardware, Retail Sales, New & Used
GB	Hardware, Wholesale
LM	Harness Repair
GB	Harness Sales
GB	Hat & Cap, Retail Sales
LB	Hat Cleaners & Renovators
LM	Hat Mfg., Cloth
HM	Hat Mfg., Felt
AL	Hatcheries
AL,LM	Hay & Straw, Sales? Storage
QP	Health Center, Charitable or Institutional
P	Health Center, Public
GB	Health Food Products, Sales
OB	Heating Contractors' Offices
LM	Heating & Ventilating Apparatus, Assembly
GB	Heating & Ventilating Apparatus, Sales
LM	Heating & Ventilating Apparatus, Storage
HM	Heavy Castings, Mfg.
(HB)GB	Hemstitching
GB	Herbs, Sales
HM	Hide & Tallow Mfg.
LM	Hoists, Equipment Storage
QP	Homes, Childrens', Charitable Institutions
P	Homes Chiddren's Public

PLANNIN

QP	Homes, Old Age, Charitable Institutions
P	Homes, Old Age, Public
LM	Horse, Dog & Cat Hospital
HM	Horse-radish Mfg.
LM	Horseshoeing
HM	Hose Mfg.
LM	Hosiery Mfg
GB	Hosiery Sales & Repairing
OB	Hospital Service Organizations
QP	Hospitals, Private
P	Hospitals, Public
	Hot Springs (See Baths)
LM	Hotel Equipment, Assembly and Custom Fabrication
GB	Hotel Equipment, Supplies & Sales
H	Hotels
P	House of Correction
GB	House Furnishings, Sales
LM	House Movers Equipment Storage Yards
LM	House Wreckers
APT	Housing (Public Project)
HM	Hydraulic Acid Mfg.
HM	Ice, Mfg.
IB	Ice, Package, Sales
LM	Ice Cream, Mfg.
LB	Ice Cream Shops
IB	Ice Skating Rink
LM	Ice Storage, Retail Distributor
GB	Imported Goods, Retail Sales
LM	Imported Goods, Warehouse
HM	Incineration of Animals & Garbage
OB	Incorporating Companies
GB	Indexing Systems & Supplies, Sales
GB	Indian Goods, Wholesale and Retail
P	Indian Reservation
P	Industrial School, General Instruction, Correctional
HM	Industrial Truck Body Mfg.
P	Infirmary, City
QP	Infirmary, Private
P	Insane Asylum
HM	Insectisides, Mfg.
LM	Insectisides, Storage & Distribution
QP	Institute (Bible)
QP	Institutional Building
LM	Insulation, Contractors' Equipment Yards
OB	Insulation, Contractors' Offices
HM	Insulation Materials, Mfg.
LM	Insulation Materials, Storage & Wholesale
OB	Insurance Companies Offices
GB	Intercommunicating Systems Sales (See Business Machines)
GB	Interior Decorators, Display & Sales
LM	Interior Decorators, Workshops

PLANNIN

LM	Iron, Custom Decorative Wrought Iron Shops
	Iron Fabrication (See Metal)
HM	Iron Foundry
LM	Irrigation Companies & Equipment
QP	Irrigation Facilities, Canals, Reservoirs
P	Jails
LM	Janitors' Supplies, Storage and Warehouse
HM	Japanning & Shellacking Works
LM	Jewellers, Bulk Mfg.
GB	Jewellers, Retail Sales, Custom Mfg.
LM	Jobbers, Bulk Materials
	Juke Boxes (See Coin Machines)
LM	Junk Dealers, Yards
HM	Jute Mills
HM	Kalsomine Mfg.
AL,LM	Kennels
HM	Kerosine Mfg, or Storage
GB	Key Shops
HM	Kindling Factory
LM	Knit Goods Mfg
OB	Labor Unions' Offices
LM	Laboratories, Analytical and Chemical
QP	Laboratories, Clinical
LM	Laboratories, Commercial Analytical
GB	Laboratories, Dental
LM	Laboratories, Experimental & Research
QP	Laboratories, Institutional
LM	Ladies' Wear Mfg.
GB	Ladies' Wear Sales
HM	Lampblack Mfg.
OB	Landscape Architects Offices
AC	Landscape Gardeners & Contractors (Same as Nursuries)
HM	Lard Mfg.
HM	Lath Mfg.
LB	Laundries, Collecting Shops
LB	Laundries, Hand (Chinese)
LM	Laundries, Processing
LB	Laundries, Self-Service
LM	Laundry Equipment & Supplies Storage
GB	Lawm Furniture, Sales
GB	Lawn Mower Repair Shops
(HB)OB	Lawyer's Offices
HM	Lead Mfg. (See Metals)
HM	Lead (White) and Oil Mfg.
HM	Leather, Artificial or Synthetic, Mfg.
HM	Leather Findings

PLANNIN

LB	Leather Goods, Custom Repairing (See Shoe Repairing)
LM	Leather Goods, Mfg., Fabrication
HM	Leather Goods, Mfg., Tanning
GB	Leather Goods, Sales, Custom or Handicraft Mfg.
	Letter, Duplicating & Mailing (See Office Service)
QP	Libraries, Institutional, Religious
LB	Libraries, Private, Rental
P	Libraries, Public
P	Lighthouse
	Lighting Fixtures, Mfg. (See Electrical & Metal)
PM	Lighting & Power Plants
LM	Limb (Artificial) Mfg.
HM	Lime Burning
HM	Lime Mfg.
LM	Lime Storage
HM	Linen Goods Mfg., Spinning, Weaving
LM	Linen Supply Laundry Service
GB	Linens, Sales
HM	Linoleum Mfg.
GB	Linoleum Sales
LM	Linoleum Storage
HM	Linseed Oil Mfg.
IB	Liquor, Dispensing Bar
HM	Liquor, Distilleries
GB	Liquor, Package Sales
LM	Liquor, Storage & Wholesale
LM	Lithographers
AL,IB	Livery Stables"
HM	Livestock, Sales & Shipping
HM	Livestock, Slaughter
LM	Livestock, Supplies, Storage and Wholesale
OB	Loan Company Offices
GB	Loan or Pawn Shops
LM	Lockers, Food Storage
LM	Locksmiths' Repair Shops
HM	Locomotive Mfg.
QP	Lodge Halls
BH	Lodging House"
LM	Loft Buildings
HM	Lubricating Compounds, Mfg.
LM	Lubricating Compounds, Storage
HM	Lubricating Oil Mfg.
HM	Luggage Mfg. (See Leather)
HM	Lumber, Bulk Processing
LM	Lumber, Cabinet Working
LM	Lumber, Storage Yard
LM	Lumber, Used & Wholesale
GB	Lunch Rooms
LM	Macaroni Mfg.
LM	Machine Shops
HM	Machine Tools, Mfg.
LM	Machine Tools, Storage

PLANNIN

	Machinery, Mfg. (See Metals, Business Machines)
LM	Machinery, Rental
LM	Machinery, Used, Storage
GB	Machinery Dealers, Sales & Showrooms
GB	Magazine Sales
	Magnetos (See Automobiles)
HM	Malleable Casting Mfg.
HM	Malt Extracts Mfg.
E,HM	Marble, Quarry Processing"
OB	Market, Stock & Bond
LM	Markets, Exchange of Goods
P	Markets, Public
GB	Massage Establishment
HM	Matches, Mfg., Wholesale & Storage
QP	Maternity Homes, Private
HM	Mattresses Mfg.
QP	Mausoleums
LM	Meat, Storage & Wholesale
LB	Meat, & Fish Retail Sales
GB	Meat & Fish Wholesale Market
HM	Meat Packers
QP	Medical Clinics, Private Institutional
P	Medical Clinics, Public
	Medical Laboratories (See Laboratories)
	Medicines, Mfg. (See Drugs)
QP	Membership Clubs (Except Supper Clubs)
QP	Memorial Home Parks (Cemeteries)
LM	Mens Clothing Mfg.
GB	Mens Clothing, Sales
GB	Merchandise Brokers' Office & Display
OB	Messengers Service
HM	Metal Polish Mfg.
	Metals
HM	Bulk Metal Processing & Castings
E	Extraction (Mining)
HM	Extrusion of Shapes
HM	Galvanizing
LM	Heavy Castings, Primary Processing
LM	Light Fabrication from Standard Shapes
LM	Machine Shops Operations
HM	Ore Reduction & Foundaries
HM	Plating, Bulk
LM	Plating, Custom & Replating
LM	Products Fabrication & Assembly (Non-nuisance in Character)
HM	Rolling Mills
LM	Meters, Mfg.
GB	Milk Bars (Refreshment Stands, Except Roadside Types)
LM	Milk Bottling Plant
P	Milk Distributing Stations, Charitable (See Dairies)
QP	Milk Distributing Stations, Commercial (See Dairies)
LM	Milk Pasturization
(HB)GB	Milliners, Custom & Sales
LM	Milliners, Wholesale & Mfg.
(HB)LM	Millinery & Artificial Flower Making"

GB	Millinery & Dress Furnishing Shop
GB	Milling Equipment, Showrooms, Sales
	Mills (See Materials Processed)
HM	Mills, Flour & Graim
HM	Mills, Jute
HM	Millwork (Woodworking) Mfg.
LM	Millwork, Sales & Storage
	Mimeographing, (See Office Service)
E,QP,P	Mineral Springs & Curative
LM	Mineral Water Distillation & Bottling
E	Mining"
LM	Mining Machinery, Wholesale Storage
GB	Mining Machinery & Supplies, Display & Sales
HM	Mirrors, Bulk Mfg.
LM	Mirrors, Resilvering, Custom Work
QP	Missions, Religious
LM	Model Construction Supplies, Mfg.
GB	Model Construction Supplies, Sales
HM	Molasses Mfg.
QP	Monastery
HM	Monuments, Mfg.
IB	Monuments, Sale & Display
LM	Mortar, Bulk Preparation & Sales
IB	Mortuary
T	Motels
GB	Motion Picture Equipment, Sales & Display
LM	Motion Picture Equipment, Storage & Mfg.
LM	Motion Picture Studios
IB	Motion Picture Theatres
IB	Motor Freight Co. Garages
OB	Motor Freight Co. Offices
LM	Motor Freight Co. Warehouses
	MOtor Truck Repairing (See Automobiles)
	Motor Truck Sales & Display (See Automobiles)
	Motor Truck Supplies (Parts) Sales (See Automobiles)
	Motorcycle Mfg. (See Automobiles)
LM	Motorcycles, Repairing & Sales
IB	Motordome
IB	Movers, Garages
LM	Movers, Warehouses
OB	Multigraphingm Commercial
P,QP	Museums
(HB)GB	Music Instruction, Commercial
QP	Music Institutes & Foundations, Noncommercial
GB	Musical Instruments, Repairing & Sales
	Nail Mfg. (See Metals)
	Natatorium (See Pool)
(HB)OB	Naturopathic Physicians"
GB	Naval Supplies, Sales
P	Navy Yard
	Needle Mfg. (See Metals)
LB	News Dealers
GB	News Service

PLANNIN

LB	News Stands
QP	Newsboys' Home
OB	Newspaper Advertising Sales
LM	Newspaper Printing
IB	Night Clubs
HM	Nitrating of Cotton or Other Materials
HM	Nitric Acid or its Derivatives Mfg
LM	Noodle Mfg.
LM	Notions, Mfg. & Wholesale
(HB)GB	Notions, Retail
(HB)"LM	Novelties, Mfg. & Wholesale
GB	Novelties, Retail
AC	Nurseries, Agricultural
QP	Nusery Schools (Child)
QP	Nurses Homes, Dormatory Buildings
GB	Nut Shop
LM	Nuts, Edible, Processing
HM	Nuts, Industrial, Processing
OB	Office Building
LM	Office Equipment Mfg. (See Also Business Machines)
GB	Office Equipment Sales
LM	Office Furniture, Storage & Warehouse
GB	Office Furniture Equipment & Supplies, Sales & Showroom
HM	Office Furniture Mfg.
OB	Office Service (Stenographic Service, Letter Preparation, Adressing & Mailing, Duplicating, Multigraphing, Mimiographing, Machine Tabulation, Research, and Statistical)
HM	Oil, Fuel, Storage
HM	Oil, Vegetable, Processing
LM	Oil Burners, Installation & Repairs
HM	Oil Burners, Mfg.
GB	Oil Burners, Sales & Showrooms
IB	Oil & Gas Stations
HM	Oil Refinery
E	Oil Wells"
HM	Oilcloth Mfg.
HM	Oiled, Rubber or Synthetic Leather Goods Mfg.
QP	Old Peoples Home, Private
P	Old Peoples Home, Public
HM	Oleomargerine Mfg.
HM	Olives, Processing
P	Opera House, Civic Building
IB	Opera House, Private Corporation
LM	Optical Goods Mfg.
GB	Opticians, Sales
GB	Optometrists, Sales
HM	Ordnance Mfg.
E,HM	Ore Dumps & Elevators"
HM	Ore Reduction
HM	Organ Mfg.

PLANNIN

LM	Ornamental Metal Work, Custom Hand Fabrication
HM	Ornamental Metal Work, Mass Production
QP	Orphan Asylum, Private Institution
P	Orphan Asylum, Public
LM	Orthopedic Appliances, Mfg.
GB	Orthopedic Appliances, Sales
(HB)OB	Osteopathic Physicians & Surgeons
IB	Outdoor Theatres, Commercial
LM	Overall Mfg.
GB	Oxygen Equipment, Rental & Distribution
HM	Oxygen Production
HM	Oyster Shucking, Bulk
GB	Package (Liquor) Store
LM	Packing & Crating Service, Fabrication
HM	Packing & Crating Service, Sawmill Operations
HM	Packing Plants (Meat)
	Paint Shops, Automobile (See Auto Repairs)
HM	Paint & Varnish, Bulk Storage, Warehouse
HM	Paint & Varnish Mfg.
GB	Paint & Varnish, Retail Sales
LM	Painters' Equipment & Supplies Shops, Wholesale & Storage
OB	Painting Contractors, Offices Only
GB	Painting Equipment & Supplies, Retail Sales
(HB)GB	Palmistry
HM	Paper Mfg.
HM	Paper Products, Mfg. (Cartons, Containers)
LM	Paper Products, Wholesale & Storage
LM	Paper Storage
	Paraffin (Same as Petroleum)
QP	Parish House
IB	Parking Lots
IB	Parks, Amusement, Private
P	Parks, Public
QP	Parochial Schools"
LM	Pattern Shop
LM	Paving Contractors, Equipment Storage
LM	Paving Materials Storage Yard
GB	Pawnbroker
HM	Pencil Factory
P	Penitentiary
IB	Penny Arcades
HM	Perfumery Mfg.
HM	Peroxyline (Plastics) Mfg.
GB	Pet Shops (Sales Only, See Animals)
HM	Petroleum Refining
HM	Petroleum Storage, Wholesale
E	Petroleum Wells"
HM	Pharmaceutical Products
LB	Pharmacy
QP	Philanthropic Uses
GB	Philatelist (Stamps)

PLANNIN

HM	Phonograph Records, Mfg.
GB	Phonograph Records, Sales
GB	Phonographs, Sales
LM	Photo-engraving Co.
GB	Photographers, Commercial, Studios
GB	Photographic Equipment & Supplies, Retail Sales
GB	Photo Printers, Retail
GB	Photostat Print Shops
GB	Physical Therapy Clinic, Commercial
QP	Physical Therapy Clinic, Institutional
OB	Physicians & Surgeons' Exchanges
(HB)OB	Physicians & Surgeons' Offices,(Individual)
GB	Piano
HM	Piano Mfg
(HB)GB	Piano Tuning, Repairing
LM	Pickles, Processed, Wholesale & Storage
HM	Pickles, Processing
HM	Picric Acid or its Derivatives, Mfg.
GB	Picture Framing, Custom
	Pier (See Dock, Wharf)
LM	Pies, Bulk, Commercial Bakery
(HB)AL	Pigeon Raising"
	Pin Mfg. (See Metals)
LM	Pipe, Concrete,Mfg.
LM	Pipe, Concrete,Storage
HM	Pipe, Metal, Mfg.
LM	Pipe, Metal, Storage
LM	Pipe, Used, Storage & Sales
LM	Pipe, Coverings, Contractors' Shops
LM	Pipe Fittings, Wholesale & Storage
PM	Pipe Line, Gas
PM	Pipe Line, Oil
OB	Pipe Line Companies Offices
PM	Pipe Line Right of Way
HM	Planing Mill
HM	Plaster, Mfg.
LM	Plaster, Wholesale & Storage
LM	Plasterers, Contractors' Yards
HM	Plastics & Plastic Products, Mfg.
GB	Plastics & Plastic Products, Sales & Demonstration
HM	Plating Works, Bulk (Galvanizing)
LM	Plating Works, Precious Metals
P	Playgrounds, Public
	Plow Mfg. (See Metals)
LM	Plumbers Shops
GB	Plumbing Fixtures & Supplies, Display & Sales
LM	Plumbing Fixtures & Supplies, Wholesale & Storage
	Pole & Shaft Mfg. (See Metals)
P	Police Station
IB	Pool - Swimming, Private Commercial
P	Pool - Swimming, Public
IB	Pool Hall
QP	Poorhouse, Private Institution
P	Poorhouse, Public
LM	Popcorn,Mfg.

P	Post Office
GB	Poster Illustration, Studio
HM	Potash Works
LM	Potato Chips, Mfg.
HM	Poultry Feed Mfg.
AL	Poultry Raising
(HM)AL	Poultry Slaughter & Dressing
LM	Poultry Supplies, Wholesale & Storage
PM	Power Lines
LB	Pressing Shops
LM	Printers
LM	Printers' Equipment & Supplies, Wholesale
HM	Printers' Ink, Mfg.
P	Prison
LB	Produce (Garden) Retail Sales
LM	Produce (Garden) Wholesale
LM	Produce Warehouse
OB	Property Management Offices
OB	Protection Service
OB	Provident Association
P	Public Buildings (See Page on Public Buildings)
OB	Public Relations Consultants
IB	Public Storage Garages
PM	Public Utility Plants
OB	Publicity Service
OB	Publishers' Offices
HM	Pumice Mfg.
LM	Pumps, Repairing & Rental
GB	Pumps, Retail & Display
HM	Pyroxylin Mfg,
E	Quarries
LM	Quick Freeze Plant
(HB)LM	Quilt Manufacturing
LB	Racetracks, Private, Commercial
	Radiator Mfg. (See Metals)
	Radiator Repair (See Automobiles)
	Radio (See Electrical)
GB	Radio, Retail Sales
PM	Radio Broadcasting Stations
PM	Radio Broadcasting Studios
	Radio Equipment (See Electric)
	Radio Equipment Appliances, Assembly, Mfg. (See Electrical)
LM	Radio Equipment Assembling
LM	Radio Repair Shop
PM	Radio Studios
HM	Rags, Bulk Collection & Storage
HM	Rags, Processing
OB	Railroad Agents

PM	Railroads
PM	Railroads, Service & Repair Yard
AL	Ranches, Cattle & Sheep
AL	Ranches, Guest
GB	Ranges & Stoves, Sales
HM	Raw Hides & Skins, Treatment
OB	Real Estate Sales Offices
P,QP	Recreation Centers
HM	Reduction of ORe
P,HM	Reduction of Garbage, Ofal, etc"
GB	Refreshment Stands (Nonalcoholic, except roadside types)
LM	Refrigeration Equipment - Custom Installation
	Refrigerator Mfg. (See Metals)
GB	Refrigerators, Sales
LM	Refrigerators, Servicing
LM	Refrigerators, Wholesale, Storage
HM	Refuse Dump"
PM	Relay Station
HM	Rendering Works
	Research Laboratories (See Laboratories)
P	Reservoirs
SF	Residence, One-family
APT	Residence, over Four-family
34F	Residence, Three & Four-family
2F	Residence, Two-family
H	Resort Hotels
QP	Rest Homes, Private
LM	Restaurant Equipment Installation, Repair Shop
GB	Restaurant Equipment & Supplies, Sales
GB	Restaurants
LB	Retail Markets
GB	Retail Stores & Shops (Downtowm)
HM	Rice Cleaning & Polishing
AL,IB	Riding Academies
GB	Riding Equipment Sales
IB	Rink Skating
GB	Road Building Equipment Sales
LM	Road Building Equipment Storage Yard
LB	Roadside Sales Stand, Food & Agricultural Products
IB	Roadside Sales Stand, Food & Drink
IB	Roadside Sales Stand, Souveniers
HM	Rock Crushing
IB	Roller Skating Rink
HM	Rolling Mills
OB	Roofers' Contractors' Offices
LM	Roofing Materials, Storage & Sales
BH	Rooming House
HM	Rope Mfg., Rope Walk
PM	Round House
	Row House""
QP	Rowing Club
HM	Rubber Products Mfg.
HM	Rubber Products Salvage
LM	Rubber Stamps Mfg.
HM	Rubbish Removal, Private Equipment & Storage
LM	Rug Cleaners
HM	Rug Mfg.

LM	Saddle Factory
GB	Saddlery Shops, Custom, Handmade
OB	Safe Depositories
LM	Safes, Opening & Repairing
GB	Safes, Sales
LM	Sail Loft, Fabrication
IB	Saloon
HM	Salt Mfg.
LM	Salvage Companies Equipment and Storage Yard (Except garbage, rubbish, rags, or putrescible material. See Junk Dealers, Yards, and Scavenger)
QP	Salvation Army
QP	Sanatoriums, Private
E	Sand & Gravel, Extraction
HM	Sand & Gravel, Processing & Storage
HM	Sandpaper Mfg.
P	Sanatariums, Public
HM	Sauerkraut, Mfg.
HM	Sausage Mfg,
OB	Saving & Loan Associations
HM	Sawdust Mfg.
HM	Sawmill
LM	Scaffolds, Equipment Storage
LM	Scales, Commercial Weighing
HM	Scavenger, Equipment, Storage Yard
LM	School Equipment & Supplies, Wholesale
	Schools
OB	Art, Commercial
QP	Art (HB) Institute
	Aviation - Ground (See Airplane)
(HB)GB	Beauty
OB	Business & Commercial, Private
P	Correctional (Penal)
OB	Correspondence & Stenographic
(HB)IB	Dancing, Private
	Flight Instruction (See Airplane)
IB	Health, Gymnastic, Private
(HB)IB	Music, Private
QP	Music, Institutes
QP	Parochial
P,QP	Physically Handicapped
QP	Private, Acedemic
P,QP	Trade
HM	Scrap Iron Storage Yard
HM	Scrap Metal (Junk), Processing
LM	Scrap Metal (Junk), Storage Only
LM	Screens, Doors & Windows Mgg
HM	Screw & Bolt Mfg.
GB	Second Hand Goods, Personal & Furniture
	Secretarial Schools (See Schools)
LM	Seed, Wholesale & Retail Garden Supplies
LM	Seed, Wholesale Sales
HM	Seed Treatment, Processing, Extraction of Oil
LB	Self Service Laundry

LM	Septic Tanks, Contractors, Construction
HM	Septic Tanks, Servicing & Cleaning Equipment Yard
LM	Service Station Equipment, Wholesale
IB	Service Stations (Gasoline)
PM	Sewage Disposal Systems, Private
P	Sewage Disposal Systems, Public
LM	Sewer Pipe Mfg., Concrete
HM	Sewer Pipe Mfg., Tile & Terra Cotta
LM	Sewer Pipe Storage
HM	Sewer Service, Equipment Yard
P	Sewer Trunk Line
GB	Sewing Machines - Sales & Repairing
LM	Sheet Metal Work, Custom Fabrication
HM	Shell Grinding
HM	Shellac Mfg.
HM	Shingle Mfg.
HM	Shipyard
LM	Shirt Factory
HM	Shoddy Mfg.
HM	Shoe Blackening Mfg.
LB	Shoe Repairing
LM	Shoe Repairing Equipment & Supplies, Wholesale
LM	Shoes, Mfg., Bulk
GB	Shoes, Retail Sales
	Shoes, Rubber,Mfg. (See Rubber Products)
GB	Shoeshine Stands
IB	Shooting Gallery
	Shovel Mfg.(See Metals)
IB	Sightseeing Tours, Garages
LM	Ship Storage Yards
HM	Shipping Co. Docks
OB	Shipping Co. Office only
GB	Sightseeing Tours, Passenger Depots
LM	Sign Erectors, Contractors' Shops
LM	Sign Painters' Shops
IB	Signboards"
LM	Signs, Maintainance Service Shops
LM	Signs, Neon & Metal Fabrication
HM	Silk Mfg.
E	Silt
HM	Size Mfg.
IB	Skating Rink
LM	Skylights, Custom Mfg.
E,HM	Slag Pile"
E	Slate Quarry
HM	Slaughterhouses
LM	Slip Covers, Custom Mfg.
HM	Smelting or Refining of Metals
HM	Snuff Mfg.
HM	Soaps Mfg.
LM	Soaps, Wholesale & Storage
P,QP	Social Centers
HM	Soda Ash Mfg.
HM	Soda Compound Mfg.
GB	Soda Fountain Supplies, Wholesale
LM	Soda Water Mfg.

IB	Soft Drink Stand
HM	Soot Blower Mfg.
QP	Sorority Houses
GB	Sound Systems & Equipment Sales
LM	Sound Systems, Rental & Service
HM	Soy Bean Oil Mfg.
LM	Specialties (See Coin Machines)
HM	Spices, Processing
LM	Spices, Wholesale & Storage
HM	Spinning Mill
LM	Sporting Goods, Mfg.
GB	Sporting Goods, Retail Sales
GB	Sportswear, Retail Sales
LM	Spraying Supplies Equipment Yard
	Springs, Auto (See Automobile)
P,QP,E	Springs, Curative & Health
HM	Springs, Metal, Mfg.
LM	Springs, Replacement & Repairs
A,K,MU,B	Stables
P	Stadium
HM	Stair Builders, Metal
LM	Stair Builders, Wood
GB	Stamp Dealers
HM	Starch Mfg.
P	State Office Building (Provincial)
GB	Stationers Retail Sales
GB	Steam Baths, Private
OB	Steamship Agency Office
LM	Steel Awnings, Custom Mfg.
LM	Steel Erectors' Equipment Yards
HM	Steel Fabrication, Heavy Sections
LM	Steel Fabricators, Light Sections
HM	Steel Mfg. Rolling Mills, etc.
HM	Steel Tank Mfg.
	Stenographer Schools (See Schools). Public /-- OB
OB	Stock & Bond Brokers
OB	Stock & Bond Market (Exchange)
HM	Stock Yards (Livestock)
E,HM	Stone Crushing
HM	Stone Cutting & Screening
E	Stone Quarry"
LM	Storage Warehouse
LM	Storage Yards, Bulk Material
LM	Storage Yards, Equipment
LM	Store Front Construction Shops
LM	Store & Office Fixtures, Contractors Shops
HM	Stove Polish, Mfg.
HM	Stoves & Ranges, Mfg.
LM	Stoves & Ranges, Wholesale & Storage
PM	Street Railway Yards & Appurtenances
HM	Structural Steel Mfg.
IB	Subdivision Signboards"
PM	Substation Electric Power & Light Co.
HM	Sugar Refining
HM	Sulphuric Acid Mfg.
LM	Surgical Supplies, Wholesale Distributors

OB	Surveyors
HM	Sweeping Compound Mfg.
IB	Swimming Pools, Private, Commercial
P	Swimming Pools, Public
QP	Synagogue
HM	Syrup & Preserve Mfg.
	Tabulating Machines (See Business Machines)
	Tack Mfg. (See Metals)
GB	Tackle Shop, Marine Supplies
LB	Tailors, Custom
HM	Tallow Rendering
LM	Tank Coating Equipment Y ard
LM	Tanks, Erection, Contractors' Yard
HM	Tanks, Fabrication
HM	Tanneries
HM	Tar, Distillation or Mfg.
HM	Tar Roofing or Waterproofing, Mfg.
IB	Taverns
OB	Tax Consultants
IB	Taxicab Garages
IB	Taxicab Stands or Yards
IB	Taxicab Storage, Repair
(HB)LM	Taxidermists
HM	Tea & Spice Packing
LB	Tea & Spice Retail Sales
(HB)GB	Tea Rooms
PM	Telegraph Companies, Facilities & Offices
APT	Tenements, Over 4-families
IB	Tennis Courts, Private, Rental
P	Tennis Courts, Public
IB	Tent Show Area
LM	Tents & Awnings Mfg.
GB	Tents & Awnings Sales
LM	Termite Control Contractors Shops
HM	Terra Cotta Mfg.
LM	Terrazzo Contractor Shops
HM	Textile Mills
IB	Theatres
IB	Theatres, Outdoor (Drive-in)
OB	Theatrical Agencies
LM	Thermometers, Mfg.
LM	Tile Contractors, Storage
HM	Tile Mfg., Decorative
HM	Tile Mfg.,Structural
	Time Recorders (See Business Machines)
HM	Tin Products, Mfg., (See Metals)
HM	Tin Refining Ore Reduction
LM	Tin Shop, Fabrication
HM	Tinfoil Mfg.
IB	Tire Repairing, Equipment & Supplies
HM	Tires, Mfg.
OB	Title Insurance Companies

HM Tobacco, Chewing, Mfg. or Treatment
LM Tobacco, Cigarette Mfg.
HM Tobacco, Curing
LM Tobacco, Wholesale & Storage
HM Tombstone, Mfg.
IB Tombstones, Sales & Display
LM Tool Grinding & Sharpening
LM Tools, Wholesale & Distribution
LM Tortillas, Mfg. Wholesale
T Tourist Courts Tourist Homes --- BH,T
IB, Tours, Garages
GB Tours, Offices & Passenger Depots
LM Towels, Supply & Service
Toys, Mfg. (See Wood, Metal)Plaster, or Paper Mfg.)
GB Toys, Retail Sales
LM Tractors, Rentals
GB Tractors, Retail Sales, Display
T Trailer Camps & Courts
LM Trailers, Repairing
GB Trailers, Sales
LM Transfer Business
GB Travel Bureaus
LM Truck Freight Movers (See Express Also)
Trucks (same as Automobiles)
GB Trunks, Custom Repair & Retail Sales
LM Trunks, Mfg.
GB Trusses, Mfg. Custom & Retail
CB Trust Companies
QP Turnverein
HM Turpentine Mfg.
2F Two-family Dwelling
Typewriters - Sales, Rental, Repairing, Parts & Supplies, (See Business Machines)

IB Undertakers
LM Underwear, Wholesale Mfg.
GB Uniforms, Rental
P U.S.A. Government Offices
LM Upholsterers, Custom
GB Upholsterers' Supplies, Sales
Used Cars, Sales (See Automobiles)

GB Vacuum Cleaners, Sales & Repairing
Valves (Same as Balls & Bearings)
GB Variety Stores - Retail
HM Varnish Mfg.
LM Vegetable & Fruits, Processing (See Foods)
LB Vegetable Market, Retail
LM Vegetable Market, Wholesale
Vending Machines, Distributors & Repairs (See Coin Machines)

LM	Venetian Blinds, Custom Mfg., Installation
	Ventilating Equipment, (See Airconditioning)
LM	Veterinarians, Clinics
(HB)OB	Veterinarians, Office only
GB	Veterinarians, Supplies, Sales
HM	Vinegar Mfg.
AC	Vineyards
AP	Vocational School, Private"
P	Vocational School, Public"
	Vulcanizers (See Tires)
HM	Wagon Mfg.
LM	Wagon Shop, Repairs
HM	Wall Board, Mfg.
LM	Wall Board, Wholesale & Storage
LM	Wallpaper Mfg.
GB	Wallpapers, Sales, Displays
LM	Warehouses
GB	Washing Machines, Sales & Display, Custom Repairing
HM	Washing Powder, Mfg.
HM	Washing Soda, Mfg.
HM	Waste Paper Products Mfg.
LM	Watches, Mfg.
GB	Watches, Sales & Repairing
LM	Water, Distilled, Processing
E,LM	Water, Mineral, Drinking or Curative, Bottling & Distribution
LM	Water Coolers (Drinking Fountains), Repairs & Service
LM	Water Heaters, Service & Repairing
LM	Water Softening Equipment, Service & Repairs
LM	Water Supply Systems, Contractors' Shops
P	Water Tank (Reservoir) Public
E,P,AC,QP	Water Wells (Classify According to Use)
HM	Waterproofing Materials, Mfg.
LM	Waterproofing Materials, Storage
HM	Waterproofing Treatment & Mfg.
P	Watershed Areas
HM	Wax Processing
HM	Waxed Container Mfg.
(HB)GB	Weaving, Handicraft
GB	Weaving & Mending, Customs
HM	Weaving Mills
LM	Weighers, Commercial
LM	Welding, Commercial
LM	Welding, Equipment & Supplies, Storage
LM	Welding Shop
LM	Well Drilling, Equipment Yard
IB	Wharf, Amusement Peir
HM	Wharf, Private Shipping Co.
P	Wharf, Public
	Wharf, Serving an Industry (See Industry)
GB	Wheel Chairs, Service & Rentals
HM	White Lead Mfg.

LM	Wholesale Produce Storage or Market, Commercial
LM	Winches, Equipment Rentals
LM	Window Cleaners Service
LM	Window Display Installations, Studio & Shops
LM	Window Glass Installation Shop
GB	Window Shades, Sales & Repairing
AC,HM	Wines, Distillation
GB	Wines, Package Retail Sales
AC,LM	Wines, Storage, Bottling, & Wholesale
HM	Wire Rope & Fencing Fabrication
LM	Wood, Storage Yard
HM	Wood Preserving,Treatment
HM	Wood Products Mfg., Bulk
HM	Wood Pulp Mfg.
LM	Woodworking, Cabinet & Custom Millwork
LM	Woodworking, Equipment, Wholesale
HM	Woodworking, Sawmill, Bulk, Processing
HM	Wool Processing
HM	Wool Scouring or Pulling
HM	Wool Spinning or Weaving
HM	Worsted Goods Mfg.
HM	Woven Goods, Mfg. Mills
LM	Woven Goods, Fabrication & Assembly
LM	Wrecking Contractors' Yards

	X-Ray Apparatus, Mfg. (See Electrical)
	X-Ray Laboratories (See Laboratories)

QP	Yacht Club, Private
P	Yacht Club, Public Facilities
HM	Yeast Cultivation, Bulk
QP	Y.M.C.A.
QP	Y.W.C.A.
QP	Y.M.H.A.
QP	Y.W.H.A.

	Zinc Products Mfg. (See Metals)
HM	Zinc Refining
P	Zoological Gardens, Public
AL,IB	Zoos, Private, Commercial

" See text on recommended procedures
"" See text - in general designate by number of families per structure

PUBLIC BUILDINGS

Academy
Airport
Amphitheatre
Armory
Army, Navy Installations
Asylums
Auditoriums
Bandstands, Shells
Bathhouses
Botanical Buildings
Bus Stations - Terminals
City Garages
City Halls
Colleges
Comfort Stations
Concession Buildings
County Court House
County Homes
Custom House
Dock
Electric Plant
Exhibition Building
Fairground Building
Federal or Dominion Indian School
Federal or Dominion Office Buildings
Ferry Buildings
Fire Alarm Station
Fire Drill Towers
Fire Stations
Fire Watch Towers
Fish Hatcheries
Forestry Building
Forts
Galleries (Art)
Gas Works
Grandstands
Health Clinics
Highway Department Depots
Hospitals
Indian Reservation Buildings
Jails
Library
Lighthouses
Market Building
Materials, Storage Yards
Military Installations
Mineral Springs, Public
Missions
Monuments
Morgue
Municipal Electrical Plants

Municipal Gas Works
Museums
Navy Yard and Naval Installations
Office Buildings
Ophanages
Parks Maintainance Buildings
Penitentiary
Police Stations
Pools
Poorhouse
Post Office
Power Plant
Prison
Public School
Racetrack - Stands
Recreational Buildings
Reformatories
Repair Shops
Restaurant Building
Schools
Sewage Disposal Plants, Public
Stadiums
Statuary
Terminal Building (Railroad, Bus, Freight)
University
War Memorials
Water Supplies & Distribution Systems
Water Tanks, Towers (Public Supply)
Watersheds
Weather Observations
Work Farms
Yacht Harbor and Club
Zoos

NOTE: The above are buildings, or decorative, or monumental structures, which do not include structures such as aquaducts, bridges, toll gates, fountains, etc., which form part of a road, utility distribution, or public park system.

ANNIN

KENORA, ONTARIO

an example of

PLANNING A SMALLER CANADIAN COMMUNITY

BASE MATERIAL

for
PLANNING

ADDITIONAL SURVEY MATERIAL

to supplement

INDUSTRIAL SURVEY
OF
KENORA, ONTARIO

FACTORS IN DEVELOPMENT.

Kenora, a town in Kenora district, Ontario, lies on the Lake of the Woods and on the Canadian Pacific Railway, 297 miles West of Port Arthur and 127 miles East of Winnipeg.

Kenora's early history revolves mainly around it's being a fort site and a portage point for the voyageurs and traders on their way to the rich "rat" country on the Winnipeg River. Curiously, in 1847 it was noted by an English traveller to consist of "a house andtwo stores, a miserable looking place".

Originally Kenora was called Rat Portage, which was united with the village of Norman under Act of Parliament about 1899, the new name being made up of the first two letters of Keewatin, Norman and Rat Portage.

As an outcome of fur trading, lumbering and mining Kenora soon found itself the head point of 200 miles of navigation and by 1890 there were twenty-one steamboats plying between Rat Portage and Fort Francis, Ontario.

Rat Portage's fortunes were tied to steamboats for a relatively short time, however. Late in the 1870's this former fur-trading establishment of one dwelling became, almost over night, a town of significance on a continental railroad, the place towhich machinery, rails, laborers, provisions, timber for ties and stations and many other purposes could be shipped. Eastward toward Port Arthur and westward toward the Rocky Mountains the shining steel of the great Canadian Pacific Railway was laid out from Rat Portage after 1879. From seven to ten sawmills were set up. The establishment of an important yard by the Canadian Pacific Railway in 1883 really brought Kenora into it's existence as a stable community for the first time.

The geological conditions of the land are a deterrant to farming. Glaciated rock outcroppings alternate with muskeg, lakes and boulder moraine land, leaving only small areas suitable for cultivation. This accounts for Kenora never becoming an important distributing centre.

The C. P. R. drainedthe timber resources of the whole area draining into the Lake of the Woods and supported the lumbering industry for about 15 years. Later, the C. N. R. absorbed the lumbering industry at the south end of the Lake - at Fort Francis.

Mining developed to some extent in the district about 1890, which gave the town some publicity.

Since the town of Kenora lies half way between Winnipeg and the Great Lakes on the C. N. R., there resulted a use of the town as a repair depot and residences of the train crews,etc. The yards were originally to the north of the settlement-- it was these yards that kept Kenora from lapsing into insignificance.

The original Main street was laid out tangential to the Bay. As the community grew, the plat extended north of the track over very rough country with an overburden of earth varying from zero to little more than three feet in depth. Inland to the East another rectangular plat not parallel to the original one but running due north-south, east-west, parallel with the creek was extended eastwards over flatter but no less rocky country to the edge of an extensive swamp. Not all streets as laid out could be opened and Main street South could not connect with Main street North above the track owing to the intervention of a rock projection.

Buildings built on Main Street were constructed so that their backs faced the uneven shoreline which was used for warehousing and boat storage. The architecture of the town was of the usual frontier type withthe exception of a hotel which was later consumed by fire.

During earlier community growth a community grew up near the planing mills at Norman 1½ miles west of Kenora. These mills obtained power from hydro-electricity harnessed by the Norman dam at the most easterly of the two openings to the Winnipeg River. The first dam was built about 1894.

Flour mills also were attracted to the area and electric power was developed from the other falls. Ore reduction plants were built and government docks constructed.

By 1901 the population of Kenora had risen to 5,200 people and by 1911 this figure had increased to 6,000 people.

Trending for sewers in the igneous rock and boulder moraine proved extremely difficult but was nevertheless undertaken in the main sections of the town.

A considerable area to the south of Lawrenson's Creek was subdivided and a grid of streets was laid indiscriminately over muskeg or precipice without regard for practicability.

With a gradual deflation of the mining boom, completion of the Canadian Pacific Railway construction in the district, and the depletion of the forests which dropped employment in the planing mills, the population fell to 5,500 in 1921. The War had no effect on the population of the town.

In 1923 American capital built a pulp and paper plant at Kenora. Power was supplied from the two power plants on the site of the falls and a line from Winnipeg Electric Company power line. The first paper machine went into operation in 1923 followed by the second in 1926. Again the population of the town passed the 6,000 mark.

1928 saw the greatest movement of wheat through Kenora and the beginning of double tracking between Winnipeg and Fort William. Now 101 freight train crews of 5 men each worked out of Kenora.

The depression brought very lean years to Kenora.

In 1932 public works were undertaken and a road built from Winnipeg to Kenora. The road from Fort Francis to Kenora was built in 1934 and a road connecting Port Arthur to Kenora was completed in 1936. By 1944 it became possible to reach Eastern Ontario by road along the Trans-Canada Highway.

As roads were completed the lake was used less and less for transportation. This brought about a social change in the town. In 1936 the town could easily have built a bridge connecting Coney Island with the mainland but didn't. This link would have opened up a new residential area on the island which now is mainly a recreational centre.

In the early 30's gold mining commenced on Red Lake just 90 air miles north of Kenora. Air shipments were now used more extensively but only the wholesalers and retailers reaped any benefits.

A number of incidents took place which offered discouragement to the development of the town. These are listed below:

Planing mill burned down in 1939 leaving only a small one employing 20 men.
Onelarge flour mill burned down and not rebuilt.
Commercial fishing thought detrimental to the tourist industry and a policy of discouragement undertaken by the government.
Suitable residential areas appeared used up.
The depression brought a natural increase of congested housing conditions.
No new houses were built, which caused a shortage.
War declared in 1939. By 1944, 1200 had left the town to take up arms in the War or to seek employment in arms factories.
Gas rationing in 1939-1940 shut off the tourist trade.

However, the income of the population increased mainly through the C.P.R. and this brought prosperity back to the town. Houses were filled, vacancies became few and lots scarce and the town's finances were restored.

The post-war boom did not miss Kenora but along with the benefits came the usual inflated housing conditions and the resultant skyrocketing of prices.

Kenora's chief hope of offering it's citizens a rising standard of living and greater opportunity still lie in it's position in the air, water, road and rail routes. There are no large markets near at hand and no great resources are available with the exception of pulpwood and grains. For this latter reason the tourist industry should be developed.

POPULATION.

Increases and decreases in the population for the District and for the Town of Kenora will be found in Charts I and II respectively. Variations in the population from immigration and emigration are shown during the period 1921 to 1944 in Chart III.

The 1941 census of the Dominion of Canada showed the total population of 7,745 of which 51.9% were male and 48.1% female. 2166 werehouseholders or heads of families.

The municipality gave the approximate occupational distribution in the industrial and municipal services of Kenora as follows:

Employed by	Total Number
Ontario-Minnesota Paper Co.	400-450
C.P.R.	600-650
Contractors	75-150
Municipality	80-130

It is interesting to note that the 1950 figure of employment by the Paper Mill Co. is 611 persons.

The racial composition (origin of heads of householders in 1941) is as follows:

British	55.4%	Polish	3.14%
Scandinavian	14.3%	German	2.9%
French	10.3%	Netherlands	1.1%
Ukeranian	6.3%	Others	6.3%
	Total		100.0%

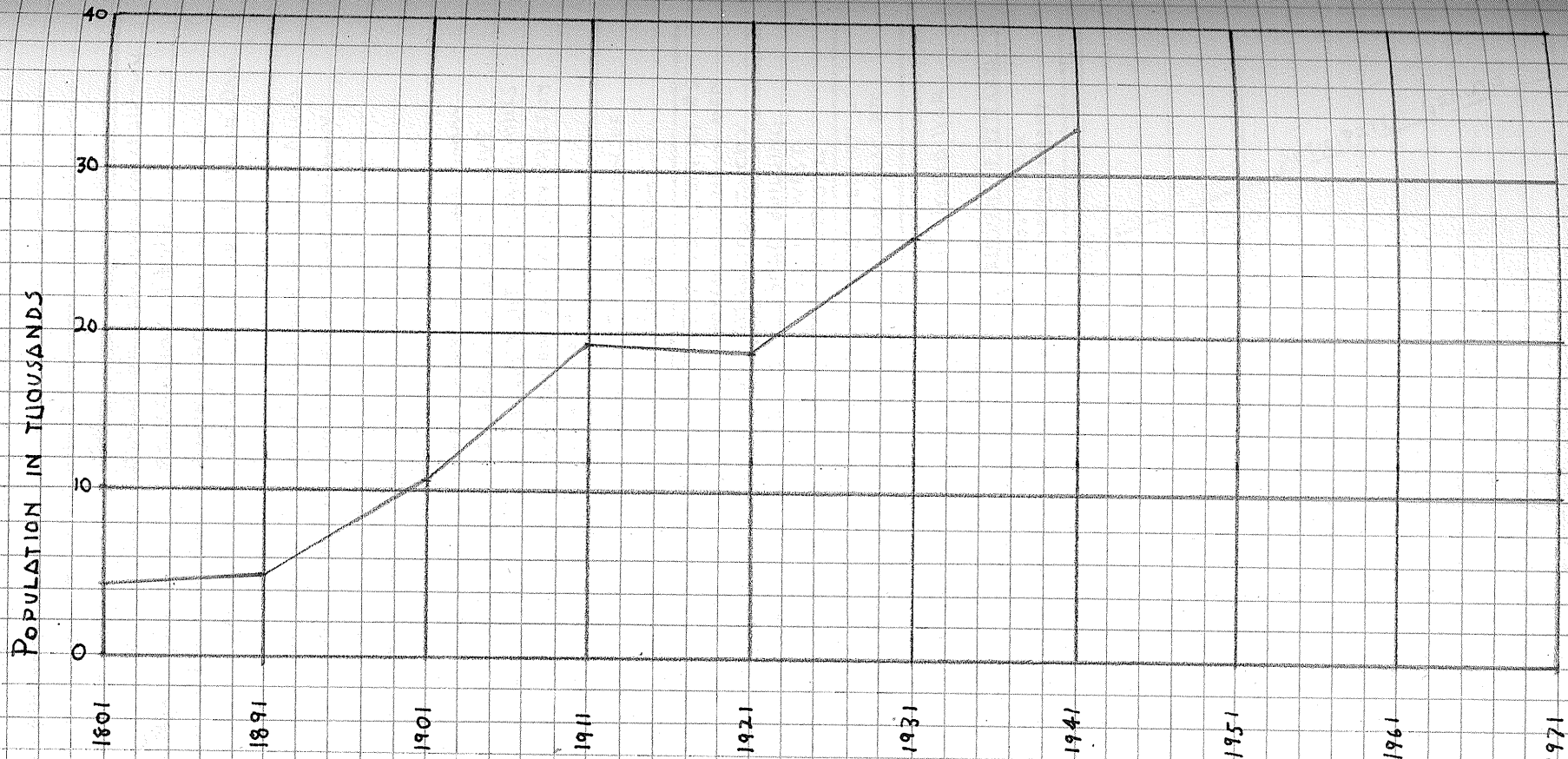
The religious affiliations are as follows for the population:

Protestant	69.01%
Catholic	29.97%
Total	98.98%

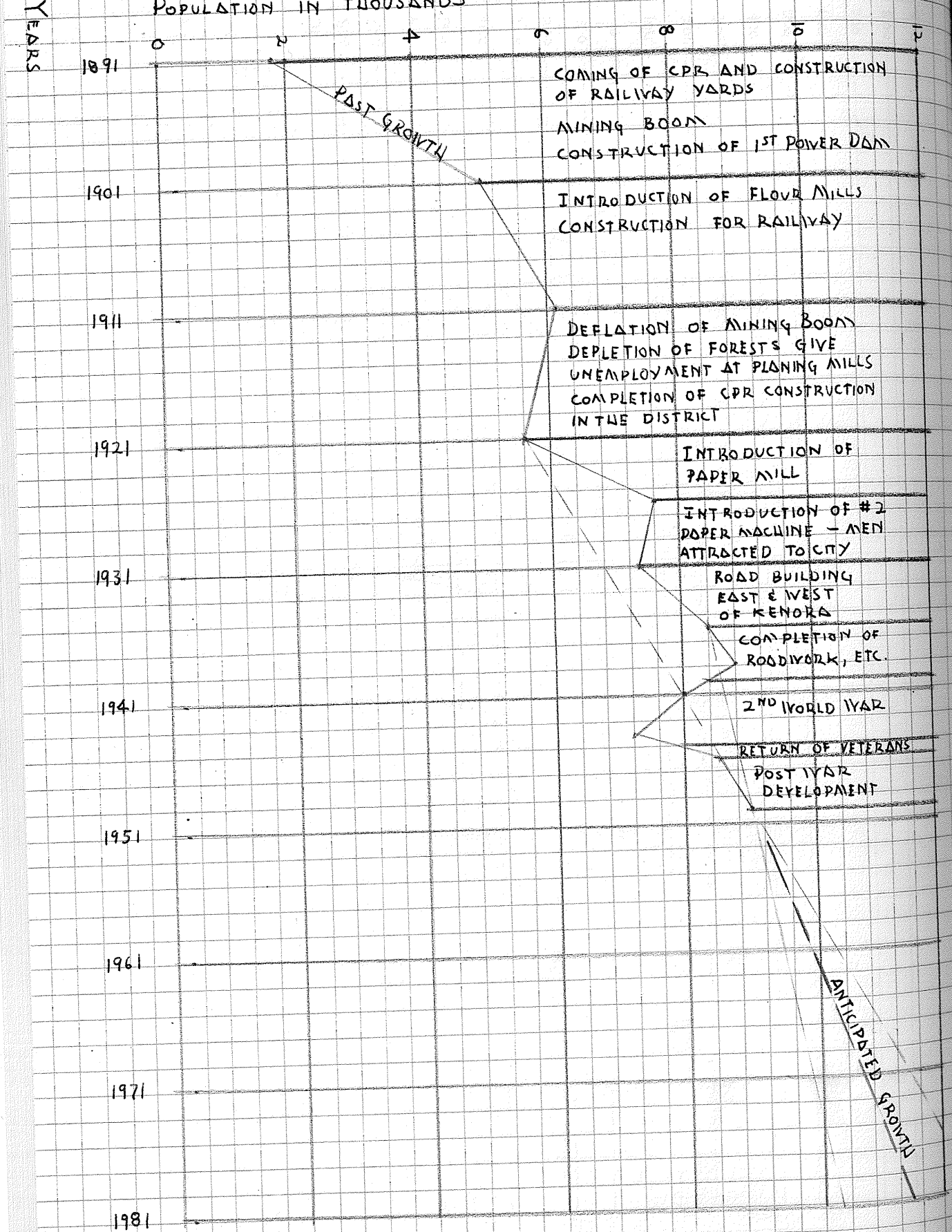
The town in making it 's population returns to the Provincial Government of Ontario has for years submitted a "summer population" of 5,500.

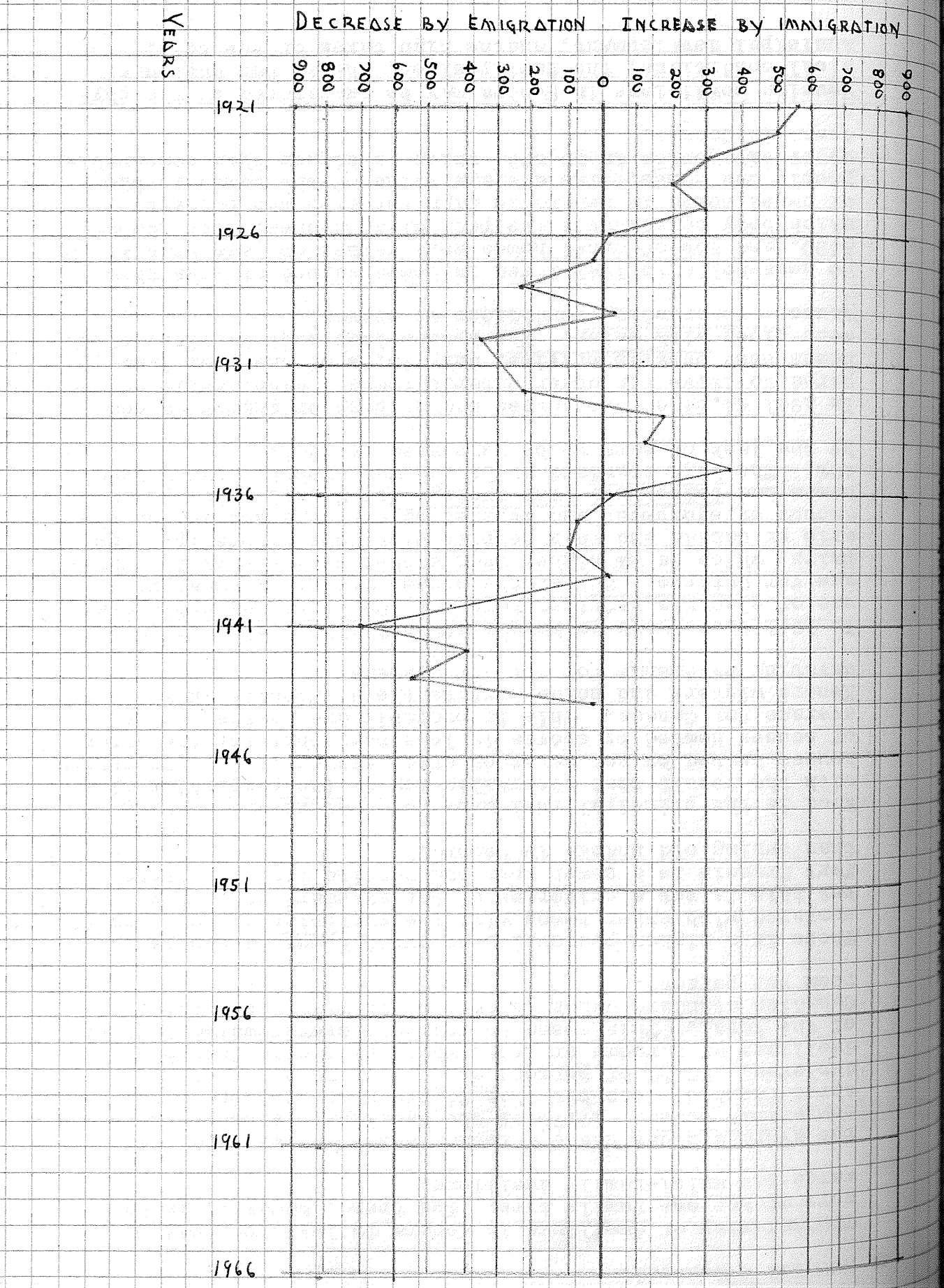
The Tourist Bureau estimates that approximately 1/3 of the transient tourists who do not own summer camps register at the bureau, hence approximately 23,150 tourists visited the town in 1941. However, no traffic counts have been made.

The trend during the war years was towards a decrease in the percentage of British born people of the Protestant faith living in the town.



NOTE: NO FUTURE TRENDS HAVE BEEN MADE ON THIS GRAPH AS IT IS TOO NEAR TO THE 1951 CENSUS AND IT WOULD BE BETTER TO WAIT SO AS TO GIVE AN ACCURATE PICTURE OF FUTURE DEVELOPMENT


YEARS
POPULATION IN THOUSANDS
0
2
4
6
8
10
12
1891
1901
1911
1921
1931
1941
1951
1961
1971
1981
POST GROWTH
COMING OF CPR AND CONSTRUCTION OF RAILWAY YARDS
MINING BOOM
CONSTRUCTION OF 1ST POWER DAM
INTRODUCTION OF FLOUR MILLS
CONSTRUCTION FOR RAILWAY
DEFLATION OF MINING BOOM
DEPLETION OF FORESTS GIVE UNEMPLOYMENT AT PLANING MILLS
COMPLETION OF CPR CONSTRUCTION IN THE DISTRICT
INTRODUCTION OF PAPER MILL
INTRODUCTION OF #2 PAPER MACHINE - MEN ATTRACTED TO CITY
ROAD BUILDING EAST & WEST OF KENORA
COMPLETION OF ROADWORK, ETC.
2ND WORLD WAR
RETURN OF VETERANS
POST WAR DEVELOPMENT
ANTICIPATED GROWTH


DECREASE BY EMIGRATION
INCREASE BY IMMIGRATION
YEARS
900
800
700
600
500
400
300
200
100
0
100
200
300
400
500
600
700
800
900
1921
1926
1931
1936
1941
1946
1951
1956
1961
1966

HOUSING - General.

The majority of dwellings in Kenora in 1941 and 1944 were of the one family type. The trend, however, is towards the multi-family dwellings.

The average house has 5.3 rooms, which is less than all comparable towns. 17.7% of the dwellings in Kenora have three rooms or less but this figure also includes flats and duplexes. 79.3% of persons over 14 years of age live in dwellings of 5 rooms or less, which size comprises 56.0% of the total. This seems to indicate overcrowding by the Canadian standard which is defined to mean "less than one room per person".

There is a higher proportion of owned homes in Kenora as compared with other towns with the exception of Fort Francis, but this is not a criterion of the standard of living. Fort Francis is a newer town and renting there is better than owning old shacks in Kenora.

Wood is the principal fuel used for heating and cooking with the result that abnormally low is the proportion of houses heated by hot water or steam systems. The proportion of houses heated by stoves is less than that for the urban average for Canada. This is probably due to the severe Kenora winters and holds despite the difficulty in excavating basements for hot air systems.

In 1941 there were no houses without electricity and the use of electric refrigerators was 10% above the urban average for Ontario. 30% of the houses needed external repairs, which is 8% higher than either the average for Ontario or Canada and this despite high home ownership. The amount of equipment and appliances was high and 70% of the homes had telephones (the average for Canadian towns was 45%) The high standard of living was probably influenced by the lack of cars to be purchased in 1941.

In 1941 44.5% of the houses had no bath or shower as compared to 19.9% for other Ontario towns. Also, 35.1% of the homes used outside privies. Only 72.6% of the dwellings were piped with water. The houses lack most in size, which causes overcrowding conditions to prevail.

90 households in 1941 lived in homes valued at less than $500. and 26% of owned homes were valued at less than $1,000 which body constitutes the poor class houses. The number of owned homes in Kenora is high but even the poorest people own homes. The average value of the homes in the upper categories is $2,603. which is higher than comparable towns in Canada.

Housing conditions in Kenora may be aggravated by the physical conditions, the family sizes, the so far unplanned municipal development, andthe high taxes of the town.

WAGE EARNINGS.

Kenora is very favoured in the size of family pay checks - only 22 cities in Canada exceed it and these include the more favoured suburbs of Toronto and Montreal, etc.

There was some unemployment for 9 weeks in 1941 but it was not high. The same is true for the unemployment in the spring of 1951. The unemployment is the result of seasonal quality in the Paper Mill, railroad and tourism.

There were four times as many people in Kenora earning over $2,950. per year as there were in Ft. Francis and other comparable towns in 1941. In 1944 the average wage in the C.P.R. yards at Kenora was $2,940. and at the mill it was between $2,000 and $2,100. There were 650 men employed in the C.P.R. yards and 350 to 450 men employed at the mill in 1944.

In 1941 there were 46.0% of the male population earning less than $1,950. There are few high pay jobs for females with the result that the females cannot supplement the family income; this accounts for less family earnings. 24.3% of the working families (including 335 farmers) earned less than $950. in 1941, which compares unfavourably with the rest of Canada.

The low income corresponds to the group of low value houses. The climate and soil do not make for easier living, which means that the anticipated relief costs will be high and certain residential assessments low.

The lack of sufficient livelihood for women and unskilled or handicapped men is detrimental to the sound and economic fabric of the town.

TRADE.

In 1941 Kenora had a per capita retail sales of $465. and stood sixth on the list of comparable towns in Canada. There were 90 stores in Kenora in 1941; only Ft. Francis has as few, and with a population 2,000 less than Kenora. Barrie, with a population 2,000 greater than Kenora, has twice as many stores.

Kenora's position in the number of stores as compared to the population of the town can be accounted for by the fact that Kenora suffers by not being the centre of a populated district. The summer purchases do not compensate for this liability.

It is interesting to note that Canadians who visit the Kenora district in the summer are more are more valuable to the retail trade than the American tourists. This is probably due to the fact that the Canadians live "closer" to the district.

In 1941 the Kenora wholesale sales of 1½ million dollars was only exceeded by three other comparable towns in Canada.

However, Kenora is not an important commercial entryport or distribution centre.

MANUFACTURE.

From 1936 to 1941 the total manufacture production in - creased by $1,170,143. or by 42%. The number of plants in the same period increased from 16 to 18. However, capital investments decreased by $1,239,555. or by 11%. The number of employees increased during the period by 53 or 8%. Aggregate salaries and wages increased during the period by $234,132. or by 45%. From these facts it is of interest to note the increase in production even though capital investments and the population decreased. This is true, however, for the comparable towns also dur- ing wartime.

Kenora has less in manufactures and less plants than other comparable towns in Canada, which fact shows the importance of the C.P.R. to the economy of the town.

LAND AND WATER AREA.

The municipal limits of the Town of Kenora include 4,400 acres of land and 1,800 acres of water. The mainland is on the eastern side of the town limits; the islands and water being to the west.

A high rocky promontry lies onthe north mainland and a swift current joining the Lake of the Woods to the Winnipeg River flows through a 200 foot wide channel between it and the first island - Tunnel Island.

Another large island, Coney Island, lies immediately to the south of Tunnel Island and forms a 350 foot boat channel with the eastern mainland. The island is 1/6 th muskeg, is covered sparsely by cottages and has no roads.

Bush Island lies slightly north of Coney Island; the two being joined by a landspit, which prevents navigation.

The land of the town itself is uneven and changes in level are frequent and abrupt.

Land -	Taxable vacant land	1184 acres
	Taxable built-up land	2359 "
	Parks and proposed park land	154 "
	Land owned by public authorities	6 97 Acres
		4403 acres.
Water -	Taxable land covered with water	10 acres
	Other land covered with water	1757 "
		1767 acres
Total land and water areas		6170 acres.

STREET PATTERN.

The original street pattern placed Main and Matheson streets at right angles to the railway tracks. Other streets crossed these as the town grew. Some streets could not even be put through because of the rough terrain. The universal system of placing 20 foot wide lanes between 40 to 80 foot streets was nevertheless carried out regardless of terrain.

Radiating colonization roads followed natural routes and entered the town from the east.

Lawrenson's Creek and industrial areas are on an East-West axis and prevent satisfactory North-South communication. The creek was bridged at the bayshore by a continuation of 1st Avenue South which followed the shoreline to connect to the foot of Matheson Street. The creek was also bridged at 7th Avenue South and at 8th Avenue South which latter carries the Trans-Canada H ighway traffic.

The railway is crossed by an underpass at the left of Main street and an overpass at Matheson street and again at 16th Avenue North by a level crossing which is 1½ miles distant from Matheson St. Between these latter two crossings there is only a footbridge connecting 7th Avenue North to 7th Avenue South.

There is no opened right of way through Mill property except Rupert Road, which is 600 feet east of Rideout Bay. The town has a legal right of way running South-West from the cemetery on 9th Street North to unopened bushland north of theC.P.R. tracks and which does not connect populated districts.

A rectangular grid has been laid out on Tunnel Island but so far only the shoreline has developed.

Norman has a haphazard road system divided by the C.P.R. which is crossed by an overpass at Parson's street.

The central lots on Coney Island have been sold with right of way reservations but so far only one has been opened as a grass path.

There are road allowances around the shores of Laurnce Lake, Old Fort Island and along much of the shore north of Golf Club Bay which reaches almost to the projection of 1st Avenue South.

Other trails exist, the most important of these being Golf Club Road.

Traffic to Redditt enters and leaves along Mellick Avenue. The airport traffic and east traffic enters and leaves the town by Airport or East Mellick Road. The Trans-Canada H igh-

way enters the town limits from the South-East, skirting Laurence Lake to turn north across Laurenson's Creek to connect with 8th Avenue South, thence right angles along 2nd Street South, and again right angles along Main Street South. The Trans-Canada Highway turns a right angle from Main Street South to leave the town and travels along the shore south of the C.P.R. railway to take the easiest route over Tunnel Island to South Norman bridging both the East and West branches of the Winnipeg River in the process. On leaving Norman the Trans Canada Highway bridges Cameron's Bay to the west of Norman and leaves the western limits of the town by Keewatin bridge.

Milegge and Road Types in Kenora.

Main butimous pavements on concrete base	5.10 mi.
Local " " " " "	4.41 "
Local " " " gravel "	7.87 "
Local gravel	3.00 "
Local improved earth	8.04 "
Public lanes and alleys	5.75 "
	34.17 miles

Unopened roads	18.21 mi.
Unopened lanes and alleys	9.24 "
	27.45 miles.

RESIDENTIAL AREAS.

The main residential neighborhoods are in five groups:

1 - South of Laurenson's Creek and west of Bushland skirting the Trans-Canada Highway -- "Lakeside".
2 - South of the C.P.R. yards and north of Laurenson's Creek bounded on the west by the Commercial Core and the east by a swamp - "Central Park".
3 - North of the C.P.R. yards and south of the Paper Mill bounded on the west by rocky bushland and on the east by a spur track to the Paper Mill property -"North Ward".
4 - North of the Paper Mill bounded on the north by bushland, on the east by the cemetary, on the west by Rideout Bay and on the south by the Paper Mill - "Rideout Bay".
5 - Without boundaries and completely separated from the main town - "Norman".

All the neighborhoods except Norman are served by sewers and piped water with the exception of a few dwellings at the perimeters. Norman has sewer and water for six houses and "summer water" above ground to some areas. Each neighborhood is separated by main industrial areas or typographical barriers within the town. Lakeside, Central Park and Norman are school districts. Each of the five neighborhoods have small shops.

Close at hand to the main neighborhoods are the fringe settlements:

1 - South-east of the town and stretching south of the Gaol on Laurenson's Lake to the south shore of the flooding, swampy Laurenson's Creek and lying east of the Trans-Canada Highway - "South East Settlement".
2 - East of the cemetary and north and south of 9th Street North and concentrated about 12th Avenue North - "12th Avenue Settlement".
3 - Extreme eastern edge of the town limits and on both sides of the C.P.R. tracks east of the yards -"Eastern Settlement
4- Southeast corner of Tunnel Island and containing the hospitals -"Tunnel Island Settlement".

None of the fringe settlements have permanent sewer and water except Tunnel Island, which is served by a water main and runs it's sewage raw by private sewers into Kenora Bay. Part of the South East Settlement is served by water mains. Septic tanks on rocky ground have proved unsatisfactory.

The South-East and East Settlements have a large proportion of residents who do farming or market gardening.

Summer settlements are mainly concentrated on the Lake of the Woods shoreline below Lakeside and on the shores of Coney Island. Other small settlements and tourist camps occur elsewhere. Summer water extends to both the main summer concentrations and to about a third of Coney Island.

Residential Acreage:

Lakeside Neighborhood	210	acres
Central Pakr "	115	"
North Ward "	105	"
Rideout Bay "	60	"
Norman "	80	"
South east Fringe Settlement	50	"
12th Ave. North "	40	"
Eastern "	40	"
Tunnel Island "	20	"
	720	" (approx.)

COMMERCIAL AREAS

The Central Commercial Core of Kenora is confined on the north by the C.P.R. with a height of land behind and on the west and south by the Lake of the Woods and on the east by Central Park Neighborhood. Main Street South is the main shopping and financial street of the town. 2nd Street South running across it is next. Matheson Street South is a secondary retail centre. Along Chipman Street, 1st Street South and along it's continuation, and Railway Street lies the wholesale commercial business and coal and wood yards. Wood yards spread through the Commercial Area but are mostly served by lanes.

Civic buildings are on Main Street South in the Commercial Area along with some parked areas.

Main Street South is well built up with shops, offices and hotels. Matheson St. South contains some empty lots on both sides. On the east side some of the buildings are only 12 and 10 feet deep because of a rail spur serving yards and buildings on Chipman Street. Two other spur lines exist but these do not go beyond the railway property north of 1st South and Railway Street. At the south end of Main and Matheson Streets and south eastward are businesses of the Lake of the Woods, boat works, ice houses, fish warehouses, etc. The whole shoreline from 2nd Street North to the C.P.R. is covered by commercial and private boat houses with the exception of the Courthouse lawn, the metal Rowing Club building, and the Library lawn.

Some small new houses fron on lanes in the Commercial Area and some old houses stand at the south ends of Main and Matheson streets.

Other commercial development may be found in the district. There are oil storage yards adjacent to the railway just east of Norman and also just east of Central Park Neighborhood. Subsidiary commercial and business establishments can be found on 6th Street South and 3rd Street North in Rideout and in Norman.

Public docks are spread through the district. There are two government boat docks at the southern ends of Main and Matheson Streets and another government dock for aeroplanes at the west end of 2nd Street South. There is also an almost unused government dock just opposite the Main Street subway. There is a small dock at the west end of 1st Street South for tourist ferry boats and two public docks owned by the town of Coney Island.

Commercial Acreage 17.1 acres.

INDUSTRIAL AREAS.

There are mainly two industrial areas in the town:
- The Minnesota- Ontario Pulp and Paper Co. grounds and mill.
- The freight yards of the C.P.R.

Smaller industrial areas are :
- Boat works at the foot of Matheson Avenue.
- Boat works at the south of Norman.
- Boat works at the north shore of Laurenson's Creek.
- A brewery at the south end of 1st Avenue South.
- Small ore reduction plant at the south shore of Norman.
- Bottling and dairy plants through the town.
- Lumber mill at the extreme west end of Norman.
- Construction yard of the Department of Highways near the brewery.
- A similar yard owned by a private company just off the Trans-Canada Highway west of Laurence Lake.
- Ontario Government Fish Hatchery on the small promontory just south of the brewery.

Abandoned industrial areas include :
- A box factory and lumber mill on the north and south shores of Laurenson's Creek where it empties into the Lake of the Woods.
- Burned shell of a flour mill just south of the C.P.R. yards to the extreme east of the built up area. This
- was used as a storage bin in 1945.
- Abandoned sites of planing mills exist west and south of Norman.

Reserve land areas are extensive for the Pulp Mill and the C.P.R. The Pulp Mill holds extensive shoreline for snub and other booming as well as many holdings elsewhere in the municipality. The C.P.R. has landscaped it's land around the station. Some of the C.P.R. holdings are routed for commercial purposes, but mostly for marshalling yards; some is bush. A round house lies at the east limits of the C.P.R. holdings.

Areas in use or reserved for industrial operation or railway purposes :

In use by light industry	8.5 acres
In use by heavy industry	63.5 "
Reserve for industrial expansion of yards and plant by the O&M Pulp and Paper Co.	75.0 "
In use for railway purposes	152.5 "
Reserve for C.P.R.	20.0 "
Rented by C.P.R.	3.5 "
	321.0 acres.

PUBLIC PARKS AND RECREATIONAL AREAS.

The following are comments on the various parks in the Town of Kenora.

C.P.R. Station Park - this belongs to the railway and is kept up by it. There are two tennis courts and a lawn bowling green in the park and the Y.M.C.A. Building fronts on the park. Approximate parked area is 4 acres.

The Library Lawn - a parked area around the Library on Main Street South running down to the lake. There is a fall of 8 feet from the main street to the embankment. There are 5 or 6 benches in the park. Approximately 4½ acres is the area of the $10,000 park.

The CourtHouse Lawn - An area owned by the Provincial Government just off Water Street on the lakeshore. There is a fall lf 12 feet from Water Street to the embankment. There are no benches in the park. The approximate area of the park is one acre.

Memorial Park - a parked and gardened area owned by the town between Water Street and Main Street just opposite the north half of the CourtHouse Lawn. It is 120 ft. x 100 ft. and contains a memorial of the 1914-1918 War. The property is valued at $10,500.

Central Park - a grass area owned by the town bounded by Park and 1st Street South and by 7th and 8th Avenues South. The park is low and very wet. Part of the area is used as a basebell diamond with bleachers in the north-west corner. The land is also used for a storage place for road gravel. It is approximately 3¾ acres in size and is valued at $5,000.

McLeod Park - a parked and gardened area owned by the town. It is situated just off the Trans-Canada Highway on a small promontory projecting south into Kenora Bay just east of the bridge over the outlet to the East Branch of the Winnipeg River. There is offstreet parking for six cars. It is about 1 acre in size.

Coney Island Beach and Park Area - An area of about 40 acres in size, value of $18,000, and owned by the town. There is a sandy beach, bathhouses and sanitary facilities valued at $6,763.67. It has a rocky hill known as "Blueberry Mountain" up which a trail has been cut.

Golf Club and Skiiing Grounds - a 9 hole private golf course with a club house in the south-east corner of the lot. The same area is used for winter sports. It's approximate area is 100 acres.

Lakeside Park and Golf Club Bay - an area with approximately 500 feet of shoreline on Golf Club Bay which is used for bathing and picnics. Some picnic tables and a cooking shelter, two dressing cabins and a small diving dock are in the area. The value is $3,993.

Dowler Park - Undeveloped. An area unfit for residential purposes valued at $3,152. and used only as a trail.

Town Island - Part of a 200 acre island in the Lake of the Woods owned by he town. It is at present leased to an organized sea cadet camp.

Indian Reserve Shore - Several miles of shoreline in the Indian Reserve south of the town limits leased by the town, accessible only by foot and as yet undeveloped.

Lakeside Park on Brewery Bay - a two acre swampy parcel set aside as a park but never developed as such. Parts of it are used as a yard by the Department of Highways and as a winter airbase for the C.P. Airlines. The property is valued at $1,049.

FARM AREAS.

Mixed light farming and market gardening occur within the wide limits of the municipality but these occur chiefly on the mainland. The farm areas are widely scattered along the eastern fringes of the residential settlement.

Approximate area devoted to chicken and market gardens 110 acres.

AIR PORTS.

Float and Ski plane licenses for 2 landing areas have been issued. The licence for ski planes is held by the town. The landing area is on the Lake of the Woods just north of Coney Island from which strip the planes taxi across Kenora Bay to the 2nd Street South dock. The winter landing area is south of ConeybIsland and from here the planes taxi across the ice to secure at the foot of 1st Avenue South.

Land planes land at the Margach air strip east of the town limits. The field is an emergency airport for Trans- Canada Air Lines and is now a customs port. The two original grass strips run north-east to south-west and from north-west to south-east and are approximately 300 feet wide. In 1943 an east-west strip 3,400 feet long and 150 feet wide was constructed. Surrounding the strips is bush country with boulders and at the crossing of the strips in the centre of the field is a height of ground. The field falls off towards the south-east. A caretaker's house, a radio station anda garage exist at the field but there is no hangar.

PUBLIC UTILITIES.

Electric power for the Town of Kenora is purchased and distributed by the town to all built-up areas within the municipal limits and to an increasing area of the Lake of the Woods for summer use. The present sources of purchased electric energy are adequate to supply the needs of the town and the surrounding area and at White Dog there is a potent latent supply of additional power.

The present sewerage system covers four of the main neighborhoods; Lakeside, Central Park, North Ward and Rideout, AND THE 12TH AVE FRINGE SETTLEMENT and the Central Commercial Area. The combined public system for sanitary wastes and road water is discharged raw into the Lake of the Woods, the Winnipeg River and Laurenson's Creek. ~~Two~~ THREE ejector stations automatically raise sewage from ~~two~~ THREE low points. All sewage is discharged through fourteen separate outfalls: 2 into Rideout Bay, 5 into the lake above the creek, and 4 into the creek itself. Probably 40 to 50 small private sewers empty into the waterbodies - of these 20 empty into the creek. The public system is mostly of stoneware pipe 6 to 18 inches in diameter, the most common being the 9 inch diameter size. Some pipes are inadequate in flood and during rain storms. The exact position of all the sewers is not fully known. 1/15 th of the total sewer length crosses private property. The principal outfall is at 1st Street South at the ferry-dock, which discharges sewage from North Ward, the Commercial Area and some of Central Park. Some short-storm water sewers exist, one of which is on Main Street North. Norman has one public sewer serving 7 houses.

The present main town water supply is pumped from the Lake of the Woods by a municipally owned pumping station on Brewery Bay in the Lakeside neighborhood. The intake pipes project 1,000 feet from the shore. The nearest main public sewer outfall is 200 feet north at 7th Avenue South but the current through the narrows travelling north between Coney Island and the 7th Avenue South is pronounced. The residential development above the water intake is mostlyb summer camps. The water is chlorinated so as to make it non-injurious. The pumping equipment is not used to the full capacity - 6in. pipe is still in use for the water main leading north-east through Lakeside from the pumping station. For pressure in the north and extreme west lots of North Ward neighborhood the pressure at Lakeside must be abnormally high. The water tank for pressure purposes stands at the highest point in North Ward Neighborhood on Matheson Street North. The Tunnel Island Settlement, including the hospitals, is served by a dead-end main running across Kenora Bay to Ocean Avenut. If the main were broken in winter or even in summer, the problem of supplying the hospitals with temporary water would be considerable. There is no feedback from Tunnel Island and the existing main is costly to maintain and service. The area of the water supply service

includes all the sewer area and extends beyond it. The South East Fringe Settlement including the Gaol has a supply of water. Part of the South Shore of Tunnel Island and the 12th Avenue North Fringe Settlements are served with water but the Eastern Fringe Settlement is not supplied. Norman has a small pumping station serving 6 houses which was originally installed for fire protection service. A summer water supply with the pipes on the ground, which are disconnected in winter, is available through a loop of the water main to the north half of Coney Island. A summer water supply is also available to the Golf Club and camps on Golf Club Bay, and to the area north of the Trans-Canada Highway and south of Laurenson's Creek. The C.P.R. buys water from the town and supplies it's yards out to the roundhouse by it's own main system. Alternative sources of supply are at Silver and Dogtooth Lakes.

The Telephone service is owned and operated as a town utility. It serviced 2,625 customers in 1948.

Garbage is collected and incinerated outside the northern limits of the town just west of Rabbit Lake.

Length of combined sanitary sewers	10.77 mi.
Length of separate storm sewers	.38 "
Length of watermains	11.88 "
Pole mileage of telephone lines	48.60 "

MUNICIPAL AND PUBLIC BUILDINGS

The town offices are in rented quarters on the west lake fron of 1st Street South. The telephone exchange is situated on Matheson Street South just south of 1st Street South. The old Y.M.C.A. building has been bought with a view to using it as a town hall.

Some of the chief municipal buildings and their insured values are:

New Municipal Building containing the Tourist Bureau (ex Y.M.C.A.) in Station Park	$40,000.
Fire Hall and Police Station on 2nd Street South and 4th Avenue South	$42,875.
Warehouse on 1st Street South and on Railway Street	$ 3,000.
Incinerator just west of Rabbit Lake and just outside town limits	$12,000.
Boat house west of Main Street	$ 150.
Pump house on Brewery Bay	$40,000.
Coney Island Bath Houses	$ 9,000.

The chief government buildings are:

The CourtHouse on Water Street.
The Land Titles Office in Memorial Park.
The Post Office on Main Street South.

H OSPITALS.

There are two hospitals in the Town of Kenora. These are the Kenora General Hospital and the St. Joseph's (R.C.) H ospital and both are situated on the southeast corner of Tunnel Island. Each of the hospitals has 63 beds and the proposed removal of staff living at the Kenora General H ospital will increase the beds of this hospital by 12 to 14 in number.

A district H ome for theAged has been approved and a site has been selected immediately adjacent to the north-east boundary of the town.

SCHOOLS.

The North Ward School and the Kenora High School are both situated on the same grounds. The site is a large tract of land owned by the town which is mostly undeveloped bush extending south from the school buildings to the C.P.R. embankment just west of the underpass. At one time a pond existed in the South-east portion of the tract which is now filled to form a roughly rectangular playfield about 50 feet below the level of the school buildings. North of the buildings there is a ½ acre triangular playfield. The grounds lack equipment and the cinder playfields are dangerous to run on. The schools command an airy location free from industry.

Transportation to the Northward and Kenora High schools extends only to Rabbit Lake. The furthest distance a grade eight student walks is two miles; the lower grades walk ¾ of a mile. It is north and west of the main school population density. The only north-south through artery of the town passes immediately north and east of the schools. Traffic must slow down on Rupert Road to make a bleak angle turn on 3rd Street North followed by a right angled turn to Main Street North where there are the points of access to the schools.

Central School is situated on rocky grounds which are slightly higher than the adjoining areas, diagonally opposite from Central Park. A play area to the east is about 1 acre in size and is unfenced. There is some cinder and gravel surfacing. Central Park is used as a baseball diamond. There is a lack of outside play equipment. The school is immediately south of a busy freight yard, which is not satisfactory.

The furthest distance grades 1 to 7 students walkt to Central School is 1½ miles but the majority are within a shorter range. The school is joined to the district across the C.P.R. tracks to the north at 7th Avenue South by a high metal footbridge with wooden steps and a wooden floor. 40 steps are required at each end of the bridge. The school grounds are unfenced. The railway property cannot be cut across at ground level because it is fenced. The hazard to the school is by through traffic along Park Street to Malach Township or the Air Port.

The South Ward School is placed on 3 flat 50 foot lots 150 feet deep. The play space is inadequate and outside equipment is lacking.

No grade 1 to 6 student walks farther than ¾ of a mile to the South Ward School. The grounds are unfenced along 6th Street South, which carries the bulk of the traffic proceeding into the built up area north into the Golf Club and Lakeside Parks.

The Indian School is outside of the town.

Norman School has been built on rocky land which extends intermittantly into bushland to the west. Some of the area is surfaced with gravel and cinders. Access to the school is rather easy because only 20% of the students are south of the C.P.R. track.

The Roman Catholics have a separate school which is not a taxpayers' problem for the town at large.

INDUSTRIAL SURVEY

OF

KENORA, ONTARIO

NORTH SHORE GATEWAY TO LAKE OF THE WOODS

"Where Recreation Is An Industry And Industry Enjoys Recreation"

Published by the Municipality of the Town of Kenora

Industrial Survey

of

Kenora, Ontario, Canada

Prepared by

The Industrial Committee, Kenora Board of Trade

1950

THIS survey of the industrial potentialities of Kenora has been prepared to serve as a means whereby the advantages of Kenora can be presented as a suitable location for new industries so that this information can readily be made available to owners or managements considering the establishment of new or branch industries in a Central Canada location.

We have endeavoured to include in the booklet many items of information of vital importance to executives seeking a new location or planning a closer approach to a central distribution point. Wherever possible, we have supplied detailed and statistical information, but in instances where no previous precedents have been established we have given the particulars in more general outline.

All inquiries will be welcomed, and will be kept confidential until a definite conclusion has been reached, or until a release of publicity has been authorized by the firm in question. We give assurance that our Town Council, Board of Trade, and Kenora citizens are ready and willing to co-operate at all times.

THE INDUSTRIAL COMMITTEE,
KENORA BOARD OF TRADE
TOWN OF KENORA.

Kenora, Ontario . . .

Kenora, today the centre of the greatest recreational area in Western Canada, was incorporated as a town in 1892, but was a thriving community many years before that date. With a 1950 population of 9,012, it is the strategic centre of a large and prosperous area. Its stability is due to the great measure of economic diversity, its wealth being derived from manufacturing, milling, tourist trade, wholesale and retail distribution, lumbering, mining, fishing and transportation.

At one time as many as thirty-one mining properties were active on Lake of the Woods which pioneered the industry in Northern and Central Canada half a century ago. Today a mining revival is indicated as Duport Mining Company in Shoal Lake re-open their mine, and Nor-Penn in Ptarmigan Bay gives every indication of being a big tonnage property.

The Ontario-Minnesota Pulp and Paepr Company Limited has a modern and highly efficient plant, with the Lake of the Woods Milling Company operating the original mills of the company at Keewatin, and other business establishments include a large lumber mill, a substantial boat-building company, Provincial Government fish hatchery, and a number of smaller industries.

During the summer months tourist visitors swell the population to around 15,000, and are a very important source of revenue in Kenora and the Lake of the Woods area. American visitors alone, spend well over $3,000,000 annually. The town is a divisional point on the main line of the C.P.R., and is a main link in the Trans-Canada highway. Because of its strategic location, it is an important distributing centre for the lumber and mining industry, and it also supplies a thriving all-year round fishing industry.

Air services, radio telephone and radio-telegraph services bring hitherto remote areas within a few minutes of Kenora, which, with its modern facilities and ideal location makes it the logical distributing point for future development.

Kenora is the administrative and judicial centre for the huge Kenora district, and has up-to-date municipal facilities, two hospitals, and two residential Indian schools. The town owns and operates its own telephone, light, water and sewage systems. Two power plants of the Mando Company are located here developing 60,000 h.p. between them, and vast power resources on the English and Winnipeg Rivers can provide 200,000 h.p. and will be developed soon.

HISTORY

The early history of Kenora and Lake of the Woods is woven into the colorful pattern of Western Canada exploration with Pierre de la Verandrye as the outstanding figure. His first discoveries saw Fort St. Charles established at the Northwest Angle, later the starting point of the famous Dawson Trail, over one hundred miles of corduroy road to old Fort Garry. La Verandrye passed through old Rat Portage, as the town was first called, en route to his expeditions to Portage la Prairie and Western Canada.

Lumbering was the principal industry in the early days and millions of feet of lumber were shipped to all parts of the west. Kenora was then distribution point for Fort Frances and a large fleet of boats carried freight and passengers between the two towns.

In the late '90s, what was then Canada's greatest mining boom took place, and British and American capital opened up a large number of properties, 31 of which were active at one time. Early on a desire for a large major industry was manifest, to add to the business enjoyed as a Canadian Pacific Railway divisional point, and in 1924 the Kenora Paper Mill and pulp mill was started, now being operated by the Ontario-Minnesota Pulp and Paper Company Limited.

ALTITUDE

The general elevation of the town is about 1075 feet above sea level.

AVERAGE TEMPERATURE

Average maximum: 63. Average minimum: 8 above

Average Precipitation: Rain, 19". Snow, 62" per year.

TRANSPORTATION

Kenora is located on the main Trans-Canada line of the Canadian Pacific Railway, with the rail distance from Kenora to Winnipeg 125.7 miles, and from Kenora to the Lakehead cities 293.4 miles. Three to four passenger trains per day, in each direction, and often more, pass through the town regularly on schedule.

Twenty miles north of Kenora by highway, the main line of the Canadian National Railways pass through Redditt, Ontario, and train connections are made by a regular bus service operated by Radio Taxi and Bus Service Three to four passenger trains each day, each way, pass through Redditt.

During the grain rush months over 1,000 cars per day of grain pass through Kenora divisional point.

TRANSPORTATION

BUS TRANSPORTATION

Kenora is the focal point and distribution centre for bus freight automotive lines.

INTERNATIONAL TRANSIT LTD.

Bus Service.

To Lakehead Cities, Monday, Wednesdays and Fridays. Return: Tuesdays, Thursdays and Saturdays.

Fort Frances: One trip daily from Kenora and one from Fort Frances to Kenora. Leaves Kenora 8.30 a.m.
Red Lake, Ont.: Three trips weekly. Leave Kenora, Mondays, Wednesdays and Fridays, 8.30 a.m. Leave Red Lake Tuesdays, Thursdays and Saturdays, 9 a.m.

MOORE'S TAXI LIMITED.

Bus, freight, express.

Bus leaves Kenora daily, 7 a.m., except Sundays. Leaves Sundays and and holidays at 6 p.m. Bus leaves Winnipeg for Kenora Mondays, Wednesdays and Fridays, 8 a.m. Leaves Kenora, Tuesdays, Thursdays and Saturdays at 3 p.m.

Freight and express leaves Kenora and Winnipeg daily.

RADIO TAXI AND BUS SERVICE

Bus service to Redditt, Ont., on Canadian National Railways leaves Kenora daily, 8.30 p.m., returning each morning at 7.45 a.m. Leaves Kenora daily at 10 a.m., returning to Kenora 1.30 p.m.

EXCEL COACH LINES LIMITED

Local bus service, serving Keewatin, North End, South End and Rabbit Lake areas in and around Kenora with regulth daily services. Keewatin (3 miles away) served on fifteen minute service.

HIGHWAY TRANSPORTATION

JOHN KRON & SON LIMITED

Cartage and Haulage Contractors.

Serves Nestor Falls on Kenora-Fort Frances highway No. 71 daily in summer, three times a week in winter, Wednesdays, Fridays and Mondays.

Sioux Lookout, once a week.

Red Lake, three times a week, Wednesdays, Fridays and Mondasy, returning same day.

ROBERTSON TRANSFER.

Freight Hauling Between Fort Frances and Kenora.

AIRPORTS AND SERVICES

Kenora has two airports, a land airport at Margach, six miles north-east of Kenora,and seaplane base at Kenora. A winter seaplane base is also used at Kenora in winter months.

The Margach airport is operated by the Department of Transport and has three runways. The longest is the east to west runway, 3,500 feet: the N.E to S.W., 2,700 feet: the N.W. to S.E., 2 800 feet.

Gasoline and oil services are available, radio service and weather services. Kenora is a registered Port of Entry,

TRANSPORTATION

and custom services are available when required. There is a radio range in connection with the airport, and also plane to ground and ground to plane radio service available.

The Kenora Seaplane Base is located in downtown Kenora at the Second Street dock, and in winter time in the bay adjacent to the Kenora Fish Hatchery, one mile from the centre of the town.

Operating Companies are:

ONTARIO CENTRAL AIRLINES LTD.

Operates out of Kenora, four aircraft, three large 9-passenger, one 3-passenger.

Operates charter and no-schedule air services, within radius of 100 miles of Kenora. Base also at Red Lake with charter and non-schedule trips within radius of 225 miles.

PARSON'S AIRWAYS

Operates out of Kenora. Four aircraft, three 4-passenger. Trips from Kenora to Lost Bay, Swain Lake, Confederation, Woman's Lake.

CANADIAN PACIFIC AIRLINES

Tri-weekly service from Winnipeg to Kenora and Red Lake, returning same days over same routes, Mondays, Wednesdays and Fridays.

WATER TRANSPORTATION

Kenora enjoys an extensive summer tourist business and hundreds of boats ply the waters of the Lake of the Woods. One American boat from Warroad, Minnesota, "The Resolute," makes weekly trips during the summer months, and many camp resorts make regular daily trips to and from their camps with freight and passengers.

Between Kenora and Minaki on the Winnipeg River, two boats are operated by R. D. Hatch, Kenora, daily trips during the summer months, and Minaki Inn, operated by the Canadian National Railways, also operates a boat.

The Ontario-Minnesota Pulp and Paper Company Limited uses several steamboats to bring in log booms from lumber camps on Lake of the Woods, and to convey supplies to camps not serviced from highways.

Boat companies supply boats for hire, and large passenger boats are available at the Stone Boat Manufacturing Co. Ltd. Kenora docks have facilities for l rge and small boats and visiting aircraft.

HIGHWAYS

Kenora is served by highways west, east, south and North.

WEST HIGHWAY No. 17, part of the main Trans-Canada highway, goes due west to Ontario-Manitoba boundary, 33 miles, is hard surfaced, and the highway from the boundary to Winnipeg is also paved. Motor miles from Kenora to Winnipeg is approximately 145 miles.

EAST HIGHWAY No. 17, part of the main Trans-Canada highway, goes east via Dryden, Ignace to the Lakehead Cities, with a considerable portion

TRANSPORTATION

of the road with hard surfacing. The approximate distance from Kenora to Lakehead is 320 miles.

SOUTH HIGHWAY No. 70, goes east and south from Kenora to Fort Frances, with the major part of the road now hard surfaced. Distance to Fort Frances, 145 miles. There is a cut-off to Rainy River, some 15 miles north of Emo. Rainy River lies due west of Fort Frances some 50 miles.

NORTH HIGHWAY No. 105 to Red Lake. East on So. 71 to Vermilion Bay and north on the new Red Lake road 90 miles. Total distance 166 miles. Road is gravel throughout but in excellent condition, due to good maintenance and use by lumber hauling trucks and freighters to Red Lake. Can be considered an all-weather highway, and is fast becoming an attraction for holiday visitors seeking the far north.

LAC LU LOOP. A secondary highway five miles west of Keewatin connecting an attractive but small agricultural area abounding in small lakes and numerous resorts. Covers between 15 and 20 miles.

COMMUNICATIONS

TELEGRAPHS

Kenora, Keewatin and district is served by the Canadian Pacific Company telegraphs, and Redditt, twenty miles north of Kenora, by the Canadian National Telegraphs. Both lines have full connections to the United States, and overseas cables via Western Union and Postal telegraphs.

TELEPHONES

Kenora owns its own municipal telephone system and at the end of 1948, serviced 2,625 customers, a gain of 69 over the previous year, with a pole mileage of 48.6. At that time, the system had an unexpended balance of $179,907 in its construction account. Part of this amount, with proceeds of the present telephone debenture issue of $400,000.00 will be used in the construction of a new Telephone Exchange Building (now completed) and the installation of an automatic dial exchange, together with the necessary new dial telephones, underground cable, and other improvements and extensions.

On the switch-over to the new dial system, (April 12, 1950) a new schedule of increased rates, provisionally approved by the Council and other authorities, is to become effective. (New rate on residence single party line to be $2.75 per month). The additional revenue to be provided under these new rates is estimated sufficient to retire the $400,000.00 issue over a fifteen year period.

RATES. To compute the monthly account, take 1/12 of the yearly rate as shown in new telephone directory.

WATER SUPPLY

Kenora obtains its water supply from the Lake of the Woods and the water is passed through filters and chlorinated.

PUMPING CAPACITY

Kenora has an unlimited supply of water and a recent survey shows a record consumption of 2,420,000 gallons pumped in one day, during the month of August, 1949. In June, 1947, the water pumped totalled 39,070,000 gallons. In June, 1948, the water pumped totalled 51,954,000 gallons. More homes and a growing community will increase this total substantially this year.

WATER RATES

Garages:

Private, containing nor more than 2 cars	$5.00 per quarter
Public, ½" water service, entrance rate	3.35 per quarter
Each additional ¼" drain service	.50 per quarter
Conveniences same as stores, each additional car owned or stored	1.25 per quarter

BOARDING HOUSES AND BLOCKS:

Entrance, 12 rooms or less, each room	.75 per quarter
Each additional room	.35 per quarter
First closet	2.25 per quarter
First urinal	1.65 per quarter
Each additional closet or urinal	1.25 per quarter
First bath	2.00 per quarter
Each additional bath	1.25 per quarter
Each basin	1.00 per quarter

PRIVATE DWELLINGS:

Entrance, 4 rooms and under	$4.00 per quarter
Each additional room	.40 per quarter
First bath	1.50 per quarter
First closet	1.50 per quarter
Each additional bath or closet	1.25 per quarter
Each basin	.50 per quarter
Water power washers	.75 per quarter

WATER SUPPLY

TAPS

Winter rate for water taken from street taps, fifty cents per month for months of October to April inclusive	$1.50 per quarter
Summer rate for water taken from taps, one dollar per month, May to September inclusive	3.00 per quarter

STORES, SHOPS AN DOFFICES ON GROUND FLOOR:

Entrance rate	$5.25 per quarter
Each closet	2.00 per quarter
Each additional closet	1.50 per quarter
Each urinal	1.75 per quarter
Each basin	1.00 per quarter

BAKERIEES, RESTAURANTS OR PLACES OF REFRESHMENT:

Entrance rate	$7.50 per quarter
Soda fountain	2.50 per quarter

BUILDING AND CONSTRUCTION PURPOSES:

	Unit Rate
For each 1,000 bricks	.10
For each cord of stone	.10
For each 100 square yards of plaster	.45
For each cubic yard of concrete	.10

OVER-ALL RATE:

Industrial	10 cents per 1,000 gallons.
Commercial	1st 20,000 gallons flat rate of $5.00
Over 20,000 gallons	charge of 25 cents per 1,000 gallons

POWER

All power distributed by the Town of Kenora is purchased from the Ontario-Minnesota Pulp and Paper Company Limited, who generate some power locally and purchase further requirements from Manitoba. The Ontario Hydro Commission is now providing a new service to rural consumers this year, and already numerous customers are receiving rural power supply.

Some 200,000 horse power on the Winnipeg and English Rivers await development, and it is understood that an agreement is about to be completed between the Provinces of Ontario and Manitoba whereby Boundary Falls on the Winnipeg River, (located within

POWER

the Province of Ontario), will be developed jointly, and the power supply, (approximately 150,000 h.p.), will be used as desired by both provinces. In this regard it is estimated that unlimited power will thus be made available to any new industries in Kenora or district. The town's capacity at present for distribution to new industries is estimated at 1,000 h.p., but the new development will provide all needed power for any additional or new industries.

SERVICE RATE

Consists of a base rate graded according to the horse power of motor and reduced by a percentage depending upon classofication of service as follows:

H.P. of Motor Max Demand	1 - 3	4 - 10	11 - 25	26 - 50	51-100	100
Base rate or fixed charge per year per installed h.p. or per h.p. maximum demand.	$15.00	$14.40	$13.80	$13.20	$12.60	$12.00

Class A—24 hours unrestricted use—90 per cent of base rate.
Class B—24 hourse restricted use—85 per cent of base rate.
Class C—10 hours unrestricted use—70 per cent of base rate.
Class D—10 hours restricted use—55 per cent of base rate.

Kilowatt Hour or Meter Rate:

First 50 hours monthly use of load at 2.5 cents per K.W.H.
Additional consumption up to the second 50 hours monthly use of load at 1.2 cents per K.W.H.
Remaining consumption at .05 cents per K.W.H.

LABOUR

Population Breakdown:

January, 1950	9014
1949	8717
Canadian subjects	8514
Aliens	203
Male persons	4573
Female persons	4144
21 years and over	5666
Under 21 years	3051

Kenora Paper Mill Employment:

Male, 585; female 26. Figures, January, 1950 of Ontario-Minnesota Pulp and Paper Company Limited.

Unemployment:

Male, 275; female, 50. January, 1950, as supplied from National Employment Service.

Labour Conditions:

Wage rates paid by the local Kenora Paper Company and the Canadian Pacific Railway Company (Kenora is a C.P.R. divisional point), tend to maintain workers' incomes at a relatively high level. While both concerns have seasonable slack periods due to the nature of employment, the high proportion of local residents enjoy a high average and the rates of pay provide yearly incomes comparing favorably with other centres. Working conditions are as good or probably better than in many locations of similar size.

CUSTOMS

PORT OF ENTRY

Kenora is a port of entry, and United States visitors entering Canada by boat and aeroplane, can be checked through customs here. During the summer months there is also a port of entry at Centre Island, Lake of the Woods, so that U.S. visitors coming by boats to points south of Kenora, can check through customs without having to come into Kenora and go back out.

Several hundred U.S. aircraft are are cleared through Customs at the Margach land airport, or through the summer airport and facilities for refueling, weather reports, transportation, etc., are available, also telephone service to and from Kenora.

BANKING FACILITIES

The following Canadian banks have branches in Kenora:

The Imperial Bank of Canada.
The Dominion Bank of Canada.
The Royal Bank of Canada.
The Bank of Nova Scotia.
In Keewatin — The Royal Bank of Canada.

HOTELS

Kenora:

Hotel Kenricia, 135 rooms.
Commercial, 46 rooms.
Ottawa, 26 rooms.
Norman, 14 rooms.
Lake of the Woods, 30 rooms.
Dalmore, 21 rooms.
Chalet, 16 rooms.

Keewatin:

Lakeshore, 27 rooms.
Bay City, 14 rooms.

Business Organizations ---- Service Clubs

Kenora Board of Trade.
Kenora Junior Chamber of Commerce.
Kenora Retail Merchants' Association.
Kenora Rotary Club.
Kenora Kinsmen Club.
Keewatin Kinsmen Club.
Kenora Lions Club.
Shriners' Club.

CHURCHES -- Kenora-Keewatin

2 United Churches.
2 Anglican.
2 Baptist.
1 Presbyterian.
1 Lutheran.
3 Roman Catholic.
1 Greek Catholic.
4 Miscellaneous.

EDUCATIONAL FACILITIES

The Kenora and Keewatin High, Public and Separate Schools as as follows:

Kenora - Keewatin District High School, 16 classrooms. New addition now being built at a cost of $425,000, will add 11 new spaces for classes.

Public Schools:

Central, 14 classrooms.
North Ward, 10 classrooms.
South Ward, 5 classrooms.
(authorityhas been received from the Ontario Municipal Board for the construction of a new ten room public school in the south ward area).
West Ward, 2 classrooms.

Mount Carmel Separate School, Kenora, 8 classrooms.

Keewatin Public School, 11 classrooms.

Separate School, 2 classrooms.

The Kenora-Keewatin District High School was built to accommodate 350 pupils and 550 are now attending. Last year authority was granted for the construction of a new addition, and with construction proceeding favorably this should be ready for occupation this fall. In addition to new classrooms, there will be a new auditorium, new shops, cafeteria, new home economics and music classroom, and a host of modern new facilities which will make the school one of the most up-to-date in Northwestern Ontario.

School attendance in Kenora is:

High School	550
Public and Separate Schools	1,330

Music is taught in all grades, High and Public Schools, special music teachers supervising the instruction in this regard. For children requiring additional instruction, special classes are held, and junior vocational classes are conducted. Manuel training and home economics are available, also night classes for New Canadians with splendid success attending these classes, and also a variety of night classes including hobbies, etc., for other citizens.

Members of the Kenora-Keewatin District High School Board are appointed by the respective councils, for two year terms, and Public and Separate School representatives are elected at the annual municipal elections for two year terms. The various boards elect their own chairmen.

PUBLIC LIBRARY

The Kenora Library maintains a volume of 10,000 books with old books culled annually as new are added. The Library building was a gift of the Carnegie Trust, but is financed and operated by the Town of Kenora, a Library Board being appointed annually, in staggered system for three year terms.

MUSIC

The Lake of the Woods Choral Society.

Kenora-Keewatin District High School choirs.

The Ukrainian Literary Society Choir.

The Keewatin-Kenora Music Club, which sponsors Celebrity Concert series, and recitals of local artists.

Male Quartettes of The S.P.E.B.S.Q.A. Association.

HOSPITALS

Kenora has two modern hospitals serving theTowns of Kenora and Keewatin and district.

Kenora General Hospital has 63 beds, and Dominion and Provincial Health Department approval has been received for an extension to the Nurses' home, which will remove staff from the hospital proper making accommodation for 12 to 14 additional beds.

St. Joseph's Hospital has 63 beds.

The medical profession numbers 12 in Kenora, Keewatin and district.

HOME FOR THE AGED

A district Home for the Aged has been approved and a site has been selected immediately adjacent to the north-east boundary of the town, in Jaffray and Melick township, less than two miles from the centre of town. All district municipalities will contribute to its maintenance and construction with Provincial Government assistance.

FIRE AND POLICE PROTECTION

The Fire Department has a staff comprising a Chief and 11 men. The department operates on the three platoon system with three men on duty at all times, and a volunteer staff in addition on hand, with men residing in the fire hall in staff quarters.

Equipment consists of the following:

One 600 gallon pumper.
(1 pumper is radio equipped)
One 500 gallon booster tank truck.
One ambulance.
One city service truck.
One hose truck.
One lifeboat.

Keewatin has a volunteer brigade and 500 gallon pumper and ladder truck. The Ontario-Minnesota Pulp & Paper Company Limited maintains a fire fighting staff with necessary equipment, and the Canadian Pacific Railway Company has firefighters and equipment.

The key or basic fire insurance rate for Kenora is one of the lowest in Northwestern Ontario, and the award for Fire Prevention activities and low fire losses has been won many years in succession, for towns of its size.

The Police Department has nine men. Equipment consists of one radio-equipped cruiser car, and one Black Maria.

RECREATIONAL FACILITIES

PARKS AND PLAYGROUNDS

Kenora has six playgrounds and six parks. The baseball grounds is at Central Park, and at the Districk High School grounds the football grounds and track and field facilities are available. McLeod Park, near the hospitals, is a beauty spot.

RECREATIONAL FACILITIES

Coney Island Beach, a few minutes' ride on the ferry, has all beach facilities, including dressing room accommodation, sandy beach, store, cooking facilities, rest rooms, etc. Other beaches are in Lakeside, and at Town Island, five miles out on the lake, where accommodation for picnic parties and docking facilities are available. A small rest space named Lookout Park overlooks the Main Street and lake with facilities for sight-seers.

GOLF CLUB

The nine hole course of the Kenora Golf and Country Club is regarded as one of the most picturesque and sporty courses in Western Canada. It is located on the shore of Lake of the Woods and has an attractive club house where meals are served. Bobby Locke, world famous golfer, and Stan Leonard, leading Canadian professional, praised the course on a visit a year ago.

Hockey:

Juvenile, Junior and Senior games are played in the Thistle Rink (natural ice) with accommodation for 2,000.

Rowing:

The Kenora Rowing Club has its building located on the Main Street, and has been in existence for 50 years. The club annually participates in the Northwestern Association Regatta with Winnipeg, Fort William, Minneapolis, St. Paul and Regina also participating. The course is a famous one, and here in 1901 Jake Gaudeur, then world's champion professional sculler, lost his title to George Towns of Australia.

Curling:

The Kenora Curling Club is one of the largest clubs in the Manitoba and Northwestern Curling Associations, and has five sheets of ice in its building. The Keewatin Club has three sheets of ice. An annual open tournament brings outstanding curlers from Western Canada and the United States.

Tennis:

Two tennis courts are operated by the Kenora Tennis Club and at resorts and private camps on Lake of the Woods other tennis courts are available.

Theatres:

At Kenora, Derry's Palace Theatre and the Bijou Theatre. Famous Players are now constructing a new theatre in Kenora to be known at the Paramount Theatre which will be completed in September.

Keewatin: The Wright Theatre, constructed last year.

Other Facilities:

The Royal Lake of the Woods Yacht Club operates its regattas in the waters adjacent to Kenora and Keewatin, and national and international competitions can be seen by those interested in yachting.

Lake of the Woods has approximately 14,500 islands, and boats can reach many of the hundreds of sandy beaches in a short time, where picnicking can be enjoyed. In addition dozens of resorts and camps are within easy reach from one to 70 miles, and here meals and accommodation can be secured as required.

TOURIST BUREAU

The Town of Kenora operates a municipal Tourist Bureau all year round, with experienced staff, where information can be secured, booklets, maps, and camp owners contacted, or home accommodation secured.

The Ontario Government operates a Reception Centre near Keewatin during the vacation months.

Municipal Government

Administration:

A Mayor and six aldermen, elected for two year terms, three each year, effects administration through a number of committees — Finance, Public Utilities, Public Works, Fire, Police, Parks and Welfare. Committees consist of a chairman and vice-chairman, with all council members on each committee, and the Mayor ex-officio.

Financial Position:

Tax collections of Kenora have great stability over the past ten years, the total annual income from this source varying from 98% to 104% of the levy. Net arrears of taxes, after reserves, amount to only $1.95 per capita.

In 1938, the net debenture per capita was $91, and this figure has been reduced to $13 in 1948. This performance has been made possible by the constructive attitude of the Town Council, who followed a very cautious spending programme for the past ten years.

While the new debenture issue for $825,000 is substantial and brings the net debt to approximately $107 per capita, it should be noted that half of this additional amount is for profitable revenue purposes, and comparison with other municipalities should take into account ownership of the telephone system.

It is interesting to note that the Town sunking fund has a surplus of $170,000, and the entire fund is invested in Dominion of Canada, Province of Ontario or Town of Kenora bonds.

Possibly most significant of the conservative manner in which the Town finances have been operated is the special Utilities Depreciation and Surplus Fund, which has been built up over the years to $700,000, and this balance is being maintained in Dominion of Canada, Provincial and Town of Kenora securities.

The Town has no further immediate borrowing in mind, although matters that may require some financing in the next two or three years are an aged persons home to be built in conjunction with the Ontario Government, local improvements, possibly a public school addition, also a sewerage disposal plant, the latter having been recommended by the Ontario Government.

As an indication of the activity and development of Kenora, there is set out below a record of building permits for the last five years:

1944	$ 52,000
1945	112,000
1946	183,000
1947	356,000
1948	287,000
1949	242,000

Summary of Financial Statistics for the Years 1938 and 1946 to 1948 inclusive.

	1938	1946	1947	1948
Population	8,476	8,279	8,192	8,594
Assessment (Taxable Only):				
Land and Buildings	Not Available	4,495,235	4,581,850	4,855,485
Business	Not Available	697,510	900,293	926,630
Total Taxable Assessment	5,037,861	5,192,745	5,482,143	5,781,845
Per Capita	594	627	669	673
Tax Levy and Collections:				
Current Levy (Mills)	Not Available	50.0	55.0	55.0
Current Levy (Dollars)	254,483	271,448	314,181	330,607
Per Capita	30.02	32.79	38.35	38.41
Current Levy Collected	219 548	252,099	295,942	306,888
% of Levy	86.3%	92.9%	94.2%	93.0%
Arrears and Penalties	30,639	19,981	18,741	16,405
Total Collections	250,187	272,080	314,683	323,293
% of Levy	98.3%	100.2%	100.2%	97.9%

Indication of Purchasing Power

The average resident's income is probably higher than the national average due to the relatively high rates of pay to workers employed in the two major industrial activities of the town. At the same time the very excellent tourist business enjoyed for many years has introduced a growing major source of income. The question of the many tourist centres provide a good deal of seasonable employment to the younger workers, both male and female, and at the same time provide a market for the sale of food, hardware, sport goods, and clothing, and a vast amount of other incidentals necessary for the trade.

Due to the relatively high wage rates paid locally and the competition of tourist buying, prices and costs in the Kenora area are probably slightly higher than the national average. Rents are high, as is the sale value of real estate. Due to the comparative lack of intensified industries, most of the purchasing power of this area is in the hands of salary and wage earner groups.

Electric meters	Domestic 2,873, Commercial 481, Power 60
Single dwellings	1866, with 2090 families (1948 figures)
Duplex dwellings	56, with 121 families
Apartment suites	164, with 164 families
Tenament Homes	9, with 34 families
Rooming house	1, with 3 families
Hotels	7, with 10 families
Total	2,105, with 2,422 families

Apartment Houses, 63.

Surrounding Agricultural Area

In the adjacent township of Jaffray and Melick mixed farming is general, and dairy farming. The farms are small but most productive and the standard of produce is rated very high by visiting judges to the annual Agricultural Fair.

The accredited herd scheme has been in effect for many years, and the Kenora district was a pioneer in this regard in Northern and Northwestern Ontario, being the first in Northwestern Ontario to adopt this scheme. A veterinarian looks after the needs in this regard. Cattle, some sheep and hogs, are developed here, and there is a good market for local produce, which could be enlarged with intensified marketing and selection organization.

One government Provincial fish Hatchery is located at Kenora and is used for the propagation of pickerel, whitefish, lake trout and speckled trout.

Newspapers

The Miner Publishing Company Limited publishes the Kenora Miner and News, a semi-weekly newspaper, and is a member of the Class "A" Weeklies and A.B.C. Bureau of Circulation.

The Daily Reminder publishes a daily multigraphed sheet.

Housing

The following statistics are taken from the 1941 Dominion of Canada census. Additional statistics were taken from the municipality in 1944.

	1941	1944
Number of Dwellings	1814	1960
Type of dwelling		
	%	
Single family	88.0	79.0
Semi-detached	3.0	13.0
Apartments or flats	8.6	8.0
	100.0	100.0

Tenure of Homes

	%
Owned	62.8
Rented	37.2
	100.0

Average number of rooms per dwelling ..... 5.3 rooms.

Heating Systems:

Steam or hot water	8.1
Hot air	46.8
Stove	45.1
	100.0

Lighting Facilities:

Electricity	100.0

Refrigeration facilities

Mechanical	48.3
Ice	20.9

Equipment and appliances:

Radio	94.3
Telephone	70.9
Vacuum cleaner	45.1
Car	33.7
All of these	25.1

Housing

Individual Wage Earners:

	Male	Female
Kenora	$1,272	$392
Ontario	1,214	545
Canada	1,136	485

Maunfactured Production:

	Production	No. Plants
1940	$3,946,330	18
"		
Capital	Employees	Salaries
$9,350,404	483	$762,186

Radio

Local Radio Station CJRL

Kenora 2160—98.2% coverage

Greater Kenora 2590—97.8% coverage

Kenora District 9370—93.4% coverage

Fifth highest coverage in Ontario.

Industrial Possibilities

There are innumerable industrial possibilities in Kenora, especially for those of national and international importance if it processes from bulky raw or base material locally abundant, or if it is designed to supply the specialized needs of a steadily growing tourist and recreational industry.

Production of plastic products using pulp and paper can find a huge material supply here. Leather, wool, hides are available. Construction of boats, construction or assembly and distribution of outboard motors, inboard motors, furniture, tourist and recreational equipment, handicrafts and quality manufactures.

There exists a large market for wooden articles, china, pottery, quality handicraft woollens, many of them now being brought in from Czecho-Slovakia, Haiti, U.K., and U.S.A.

A number of attractive sites are available, some served with spur line and adjacent to highways and town streets. Water supply is available, and power, and with the development of Boundary Falls, now under negotiation with the Manitoba Government, some 150,000 h.p. will be made available.

In 1941 the total sales, both wholesale and retail amounted to $5,101,500. In the same year total salaries and wages paid in Kenora amounted to $2,641,000.

Kenora is within 500 air miles of from 13 to 15 million people, the vast majority of whom are in the U.S.A. Twenty per cent of this number, approximately 3,000,000, may be considered wealthy enough to be potential visitors to Kenora.

Kenora and Lake of the Woods was the great mining area of 1900-02, and today there is a definite revival, with two possible producers now at work in

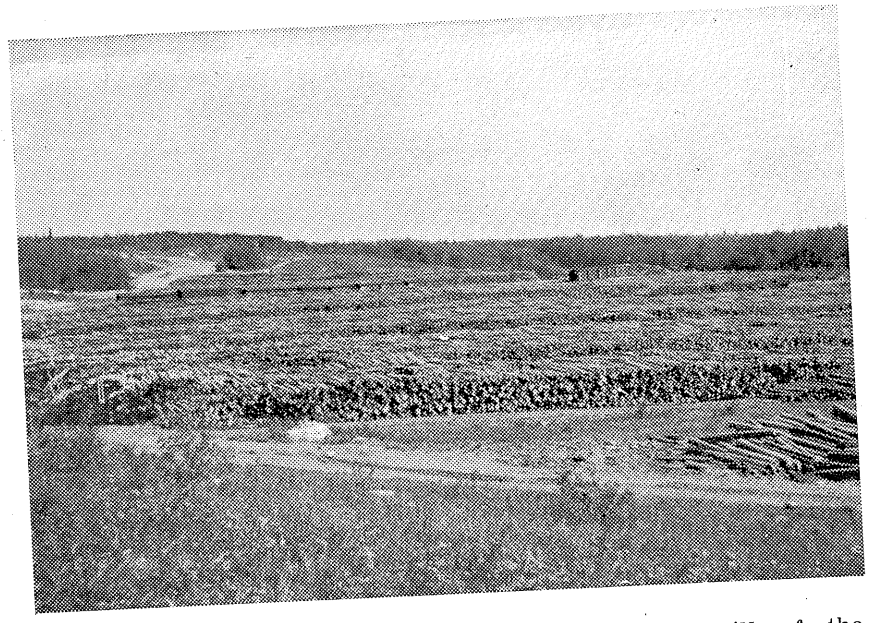
Industrial Possibilities

exploration, some twelve miles southwest of Kenora.

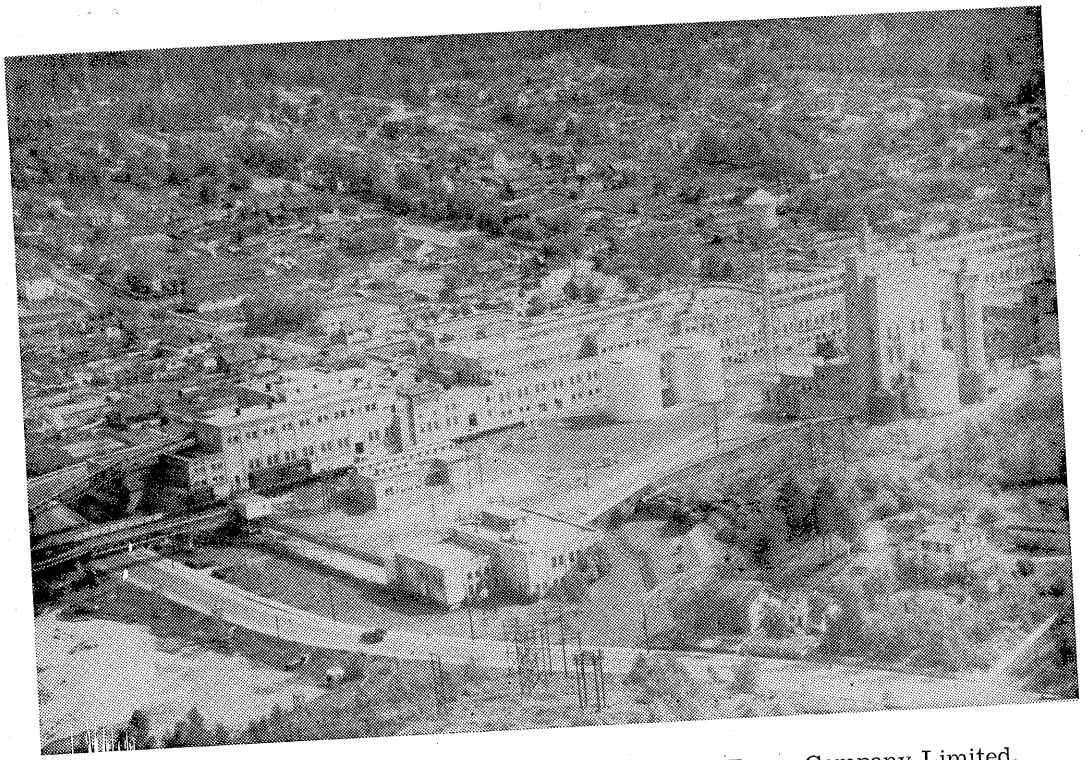
Fifteen years ago Duport Mine took ore valued at $3,000 to the ton from their mine in Shoal Lake and it had to be shipped to Tacoma, Washington, for smelting. Duport has re-opened this mine and plan to sink another shaft. In the meantime an extensive diamond drilling program is under way, and if results warrant it and sufficient tonnage can be blocked out, a mine will definitely be established. Nor-Penn is another property a few miles from Duport where immense possibilities loom up, and the whole area has been staked in view of the activities of both mines.



An aerial view of Kenora showing its attractive location as the northern gateway to beautiful Lake of the Woods.



A pulpwood supply awaiting shipment to the Kenora mill of the Ontario-Minnesota Pulp and Paper Co. Ltd.



The Kenora Mill of the Ontario-Minnesota Pulp and Paper Company Limited.

Miner Publishing Co. Kenora, Ontario.

251

VACATIONIST'S GUIDE

to

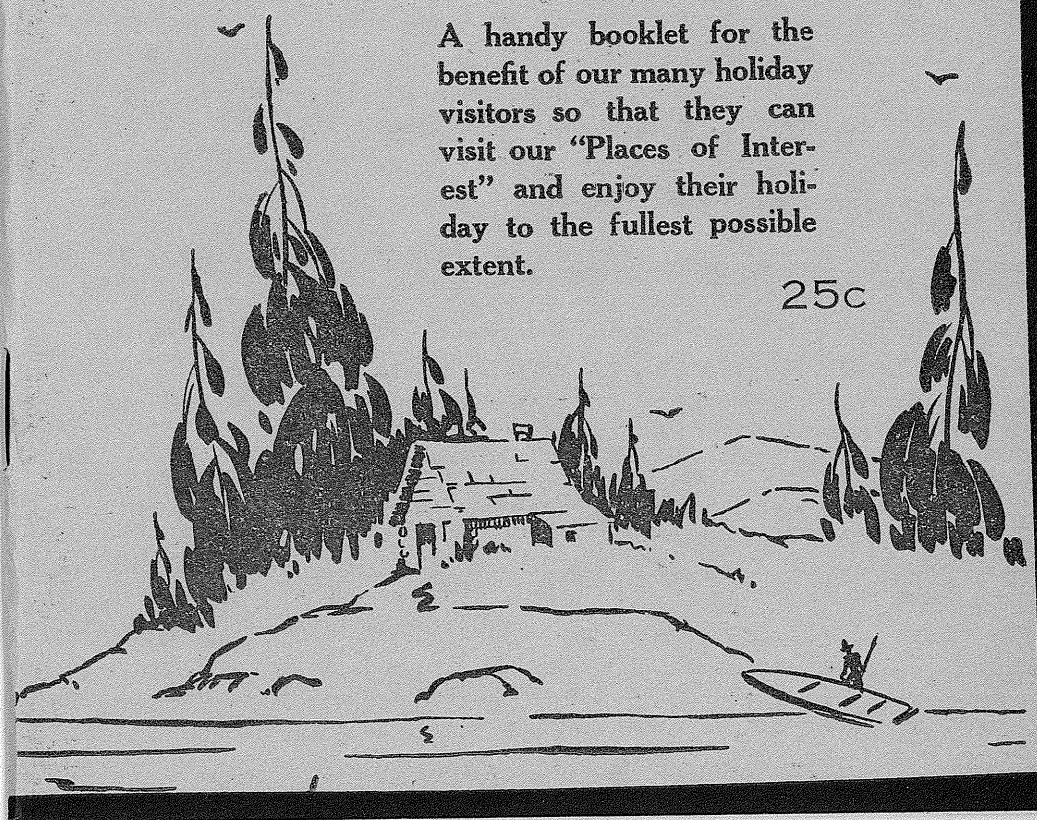
KENORA - KEEWATIN

and

Lake of the Woods

A handy booklet for the benefit of our many holiday visitors so that they can visit our "Places of Interest" and enjoy their holiday to the fullest possible extent.

25c



IN CASE OF EMERGENCY

POLICE

Accidents in Town

Kenora Police ..... Phone 6300
Keewatin Police ..... Keewatin 2234

Accidents in District

Provincial Police, Court House ..... Phone 6332

On the Lake or in the Air

Royal Canadian Mounted Police, Post Office Bldg. 7142

Ambulance ..... Phone 6523

HOSPITALS

Kenora General Hospital ..... Phone 6711
St. Joseph's Hospital ..... Phone 6611

DOCTORS

Doctors	Office	Residence
Dr. S. M. Burris	7152	8276
Dr. R. G. Davidson	6222	7443
Dr. A. D. Ferguson	7582	7582
Dr. S. C. Henderson	6423	8433
Dr. J. H. Johnson	6512	6356
Dr. H. F. King	6222	8688
Dr. D. J. Mason	7152	7959
Dr. J. P. Paton	8642	7153
Dr. F. P. Playfair	6423	6274

A WELCOME ON BEHALF OF OUR CITIZENS

For close on sixty years, Kenora, Keewatin and the beautiful Lake of the Woods have been the holiday playground of hundreds of thousands of visitors, seeking health, rest and recreation in our midst, and on our beautiful Lake of the Woods with its fourteen thousand islands.

As Mayors of Kenora and Keewatin for 1950, it is a sincere pleasure for us to extend to all our holiday visitors, on behalf of the members of the Town Councils and of our citizens, a warm welcome, and our sincere hopes that you may find our communities friendly, our hospitality all that you have desired, and our lake a place of rest, recreation and entertainment.

We are very proud of our communities and district for in addition to the unexcelled holiday attractions there are available, we have a historical background of community and industrial development which goes back to pioneer days, and we have seen great events in lumbering, mining, and fishing. Now we have a large modern industry in the Ontario-Minnesota Pulp and Paper Company Limited turning out over 300 tons of newsprint daily In the Canadian Pacific Railway Company and its divisional point operations, and with Keewatin built around the activities of the first mills of the Lake of the Woods Milling Company Ltd., we are enjoying industrial prosperity and hope that with the coming of hydro to our district that still greater development will be experienced.

We believe this the ideal district to live in, and in which to holiday, and we trust that your opinion will be

Kenora District
and
Lake of the Woods

Some years ago a frequent visitor to Kenora who had learned to love the wealth of lake and forest, was asked to suggest a suitable slogan, and replied without hesitation, "Where Nature Lavished her Gifts."

This surely describes the magnificent beauty of this great vacation land, which for the past sixty years and more has been the mecca of those who sought nature in its richest beauty, over fourteen thousand islands dotted like jewels on its sparkling waters; the scent of the pines, sunsets unrivalled in gorgeous magnificence; cool nights; warm, gentle waters; and a place where rest, recreation and entertainment can be found in abundance.

Lake of the Woods goes back into history, for it was first discovered by the Indians in ages of which no records exist, and called by them "Lake of the Islands." The Indian name was "Min-es-tic," which means Lake of the Islands. The Indian word for wood is "mis-tic," and the great similarity of sound of the two words was readily confounded by the early French settlers which caused the name to be changed from Lake of the Islands to Lake of the Woods, which has become permanently established.

Then came Jacques de Noyon who first saw its shores, and later Pierre de la Verandrye who built his fort at the Northwest Angle, re-discovered some years ago, and from there explored vast territories in the Canadian west. Previously the Ojibway and the Sioux Indians had fought bitter battles for its possession.

At Northwest Angle the great Dawson Trail was started and ox carts took the hardy pioneers over bush roads to open up the great Canadian wheat plains, with Fort Garry the first settlement.



In the days of the Riel rebellion, General Wolseley came by Fort William and Fort Frances up the chain of waterways to Kenora, and thence via the Winnipeg River to Winnipeg and the west. Kenora Bay must have seen de la Verandrye and his Indian guides portage across to the river en route to the west, and its early name, Rat Portage, indicated that the muskrats abounded in those early days and used the same portage to and from the river.

With such a wealth of forests abounding in every direction it will readily be understood that lumbering was the major industry in early pioneer days, and as many as seven huge sawmills at Norman, now Kenora's west suburb, were supplying millions of feet of lumber for Western Canada.

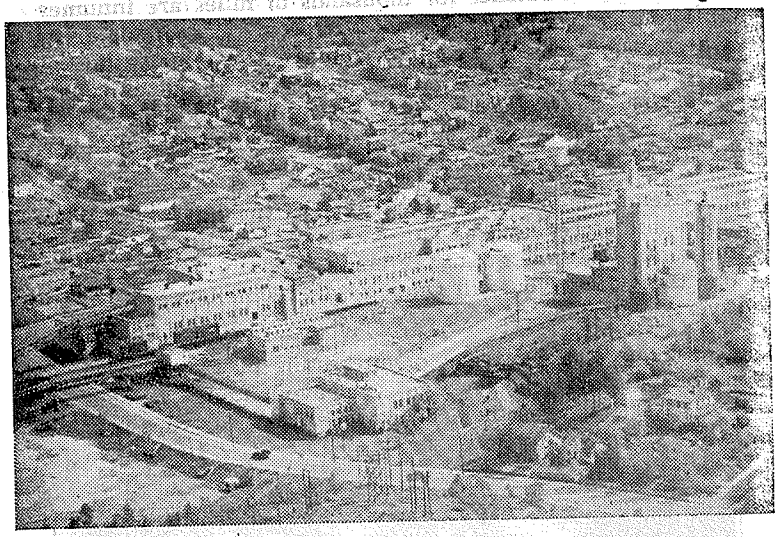
Then came the mining boom of the nineties and the beginning of this century, and between forty and sixty mining properties were active in those boom days, with British capital and engineers here in abundance, and several millions of gold bullion were mined here. The sensational finds in Klondike drew attention elsewhere, and although several mines such as Wendigo have produced since that time, the area still awaits the big find that will again direct attention to this wealthy area, and bring it back into production as one of the principal mining fields.

Today Kenora enjoys the benefit of three large industries. The Canadian Pacific Railway Company with its divisional point and shops employs over five hundred citizens; the Ontario-Minnesota Pulp and Paper Company Limited with its vast timber operations, manufacture over 300 tons of newsprint a day, and employs in mill and bush over fifteen hundred employees, and also a growing tourist industry.

In 1946 and 1947 some two million dollars of American funds were cleared through Kenora banks, and yet this vast



AERIAL VIEW OF KENORA: Kenora covers over and has a population now over nine thousand. the buildings of the Ontario-Minnesota Pulp and



The Kenora mill of the Ontario-Minnesota Pulp and Paper Company Limited, which can be visited. Secure your tickets at the municipal tourist bureau.

holiday area has only been touched on the fringes of its immense holiday possibilities.

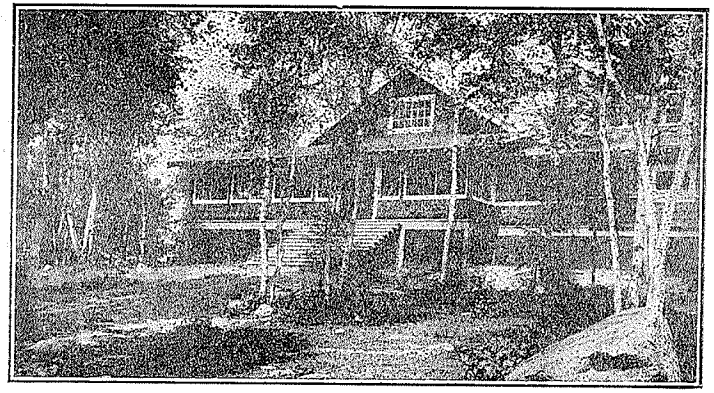
Standing as the north shore gateways to the Lake of the Woods are the twin towns of Kenora and Keewatin, bound together by common interests in pioneer days and still closely associated and related by shared utilities, business associations and warm and lasting friendships, and to the north is a small but rich farming country, with farms located in beautiful spots beside lovely lakes and woods, where drought is unknown, and the surroundings blessed with magnificent natural beauty.

Then for hundreds of miles around in the great chain

of lakes that stretches for thousands of miles are innumerable tourist camps and resorts, located in rich holiday areas, where game fish of all kinds abound, the mighty muskellunge, fighting black bass, tasty lake trout, the much sought table dish the pickerel or wall-eyed pike, and the great northern pike, all in quantity and with catches going over existing records with consistent repetition.

Kenora and Keewatin are modern thriving towns, with up-to-date stores, and as you can well imagine, possessing the famous blankets, English china, and the hundred and one things that you will want to take home as gifts to relatives and friends.

It has, too, a number of interesting places to visit, and in the following pages we will endeavour to outline some of those attractions so that you can see them for yourself, and form your own opinions.



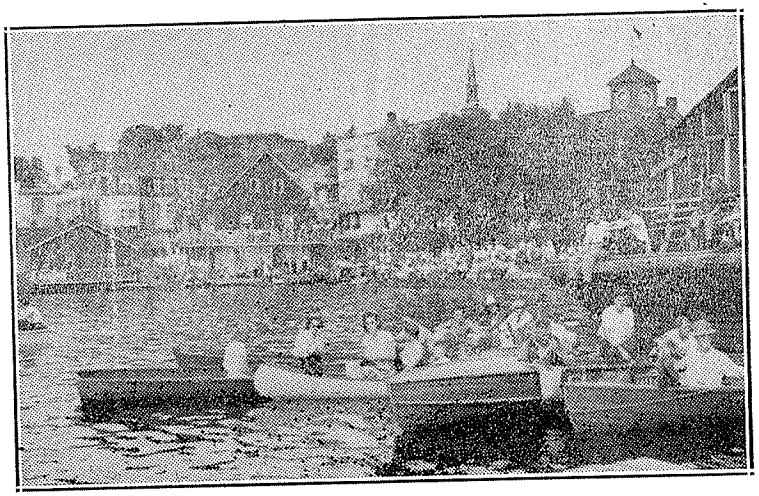
Some three miles from Kenora, and reached only by boat, is the C.P.R. Chalet and Bungalow Camps, a fully modern resort for our holiday visitors. Above can be seen the main lodge which contains offices, spacious lounge, and dining room.



In the very near future a new power development to the north (some sixty miles) will bring 150,000 new horsepower to add to the hydro wealth of this Province, and the district will be blanketed with power lines to farms and resorts and camps, bringing modern facilities to the northlands and the peak of comfort to add to the vast wealth that nature has bestowed.

Years ago a great manufacturing company moved its factory from a large city and built a new town in a country spot favored, as the English countryside has been favored by nature. Here a new town was built and called Port Sunlight.

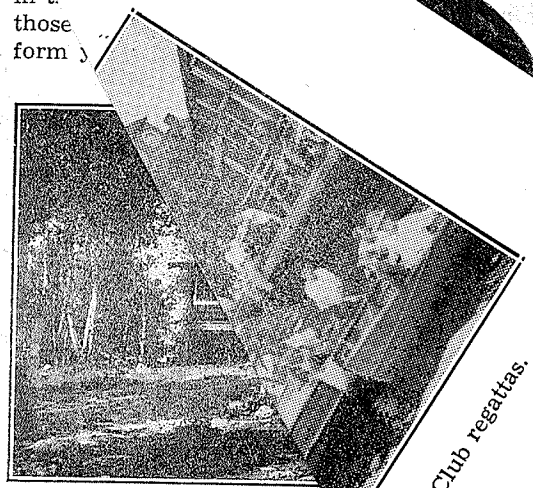
Kenora's possibilities for industrial development in the future are boundless. Here with the new power available, will be great sites for new industries, and where could more contented employees be located than in the vicinity of Kenora and Keewatin where natural beauty of surroundings can make for peace, happiness and contentment.



Scene at one of the annual Rowing Club regattas.

We welcome you to Kenora and district, and we trust that you will find our hospitality a feature of your stay, and the Lake of the Woods a magnet of contentment, so that you will return again and again with the years, finding new places to holiday, or perhaps locating on some summer camp site of your own, to return each year like the wanderer to your home at eventide.

in t.
those
form



Some three miles from Ken
is the C.P.R. Chalet and Bun
resort for our holiday visitors.
main lodge which contains off
dining room.

Rowing Club regattas.



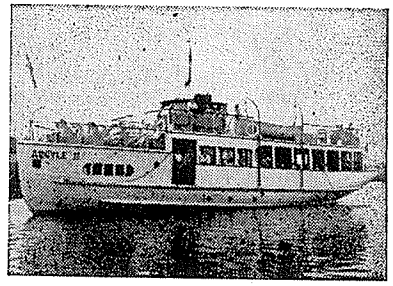
Places You Should See

The Paper Mill

The management of the Ontario-Minnesota Pulp and Paper Company Limited, invites you to enjoy a conducted tour of their Kenora Paper Mill, where you will see all the operations of this great industry, and be furnished with a booklet outlining all the various processes. Over 105,000 tons of newsprint produced annually, 140,000 cords of wood milled, payroll over $3,200,000. Schedule tours, 8.30 a.m., 9.45 a.m., 11 a.m., 1.30 p.m., 2.45 p.m., 4 p.m. Starting point, main office, 504 Ninth Street North (just north of the mill. Go past the Post Office (yes, that building up Main Street with the Union Jack flying) take first turning right, under the railway and follow road north to Paper Mill. Get your pass from the Kenora Tourist Bureau, across from the Kenora Fire Hall on Second Street (phone 8233), for you can well understand only a limited number of sight-seers can be taken on any tour. The visit will be a source of interest to you and delight to the young folks.

Enjoy a Trip on the Lake

The Ferry Argyle II will take you out for a two hour trip on Lake of the Woods, some fifteen miles of gorgeous panorama, see the beautiful summer homes, the Devil's Gap, a painted rock that guards the entrance to the narrow gap, and once said to be an Indian "spirit" rock. Trips leave 10.15 a.m., 2 p.m., 4 p.m. 7.45 p.m. and 10.15 p.m. Fare, 75 cents. Midnight cruises also. Go to Ferry dock in rear of Bank of Nova Scotia building, off Main Street. You shouldn't miss this trip.



For Longer Lake Trips

You can charter a small boat at Stone's or Mastercraft and arrange trips to Blindfold, Balancing Rock, Scotty's Island, Welcome Channel, to all the popular fishing grounds on the lake where pleasure trips, fishing trips and recreation can be combined. Arrange for your lunch and take a sweater along for coming home at night.

Do You Like to Golf?

At the Kenora Golf and Country Club there is a nine hole entertainment that will test your golfing skill and provide sport and recreation. All the "good" golfers, including Bobby Locke, South African star, say it's a "sporty" course. Take the drive around the lakefront, called First Avenue South, and follow the signs on the paved road. Playing rates are reasonable, facilities for meals and lunches excellent. Phone 7995 and arrange for your caddie.

Play Tennis

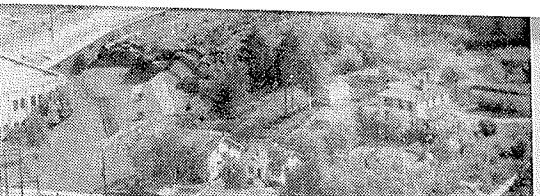
Just south of the C.P.R. depot are two excellent tennis courts of the Kenora Tennis Club. You can play here at reasonable rates per set. Place to park car, seats to park your friends, and refreshments within reasonable, in fact, close distance.

The River Trip

Perhaps you prefer the winding beauty of a river to the spaciousness of the lake. Then arrange to take the river trip to Minaki, famed resort area on the Canadian National. It has a beauty all its own, changing scenery every minute. See the rapid Dalles in action. Leave Kenora at 10 a.m., arrive Minaki 12.05 noon. Leave Minaki 3.20 p.m., arrive Kenora 5.45 p.m. Return fare $3.00. Good meals at the Minaki Inn, and other lodges. A splendid nine hole golf course, famous muskellunge fishing, boats for hire. Boat at Rideout Bay. Drive north on Main Street, swing left past Post Office, pass through C.P.R. subway, and left again at the corner of the Kenora Paper Mill. Only a few minutes in your car, and a day of enjoyment.

How About Horseback Riding?

Horses for hire one mile east of town. Visit the Whitehead Ranch, and enjoy riding through lovely bush trails. Beauty all around you and a good horse. What more could a good equestrian desire?



Picnic and Beaches for the Kiddies

The young folks deserve consideration, and of course Father and Mother always like to demonstrate how they used to swim in their young days. Then take the ferry Argyle II. to Coney Beach, only three or four minutes in the boat. A lovely beach, seats and a shade for the parents, sandy playground for the young folks, diving boards for the experienced, and safety and comfort. A fully equipped refreshment booth has candies and drinks, etc. Swings for the kiddies. Or take a walk up to Blueberry Mountain, up a lovely trail, ten minutes will do it, and see the lake and town from its rocky eminence. Cabins, too, if you want to stay at the beach.

Or visit KEEWATIN'S LOVELY BEACH. Picnic tables, nice bathing beach, quiet, restful. Swings for the young folks. Located just south of the Town of Keewatin three miles from Kenora. Drive west on highway 17 and watch for the sign. Refreshments can be had in Keewatin, only a minute or two away from the beach.

Restful Beauty Spots—Our Parks

Drive your car to our parks and sit beneath shady trees and watch the boats go by and the kiddies play on the grass.

McLEOD PARK. Drive north on Main Street, turn left and half a mile away or less is McLeod Park, called after a great pioneer citizen and lumberman. Its area has been converted from rock and wilderness, into a floral beauty that will captivate you.

Lookout Park

Drive north on Main Street, and look up and you will see small and dainty Lookout Park. Shady trees and seats where you can rest and watch the busy scene below. The Main Street, the bay, the aeroplanes, the boats, and at night the brilliant array of colored lights that make the town a veritable fairyland. It's small but very, very nice and restful.

Beatty Park, Keewatin

Unsurpassed for floral beauty is Beatty Park, Keewatin, a place of floral display and shady trees. See the Memorial Building, the Lake of the Woods Milling Company tribute to the fallen of World War I. Sit in the park and watch the boats, and the kiddies can play under your watchful eye. Refreshments less than a block away.

Rabbit Lake

Drive north on the Redditt Road, past the Paper Mill, and follow the signs to lovely Rabbit Lake. At its east end a beautiful beach, in which the kiddies can bathe in safety. A soft clay bottom and warm water. You can bathe in it all day and never get chilly. A diving board for the better swimmers. Stores all around to supply refreshments.

Rushing River

Twenty miles south on the Fort Frances highway is a lovely spot supervised and maintained by the Department of Highways. Here the cool waters of Rushing River come dancing down the rocks to seek the broad expanse of Lake of the Woods, and it has a beauty and setting that is unrivalled for those who like a background for a photograph t is different. Here you will find picnic tables, cooking ties, and shaded parking space. This should be a must round of visits.

v a Day of Boating on the Lake

ty for a whole day on the lake. Boats front. Get the experienced driver to Channel, to Balancing Rock, to Yel- and one spots on the lake where nds you can find sandy beaches, from everybody else. A trip s is a treat never to be for- he trip will be one of the

Do You Like Fishing?

Got your tackle? If not, we have a dozen or more stores that can supply your every need. Rent your boat, fish in close to town, or if you want to go down the lake, get a boatman who knows the lake. You will find the

TASTY PICKEREL. He gives you a battle and later when the shore lunch is enjoyed and the pickerel or wall-eyed pike as our American friends call them, comes off the pan, prepare for an epicurean treat. They are caught in all sections of the lake.

BIG LAKE TROUT. Many big ones caught, in the warm weather away deep down in the cool holes and on a copper line. But when you hook a big one, and it's all wrapped up in bread crumbs and egg yolk, say brother, you've never tasted anything better.

FIGHTING BLACK BASS. This small-mouthed beauty can battle like a heavyweight champion and give you a battle, and when he's come off the pan there is also a dish fit for a king.

THE CHAMPION MUSKELLUNGE. Americans who like to get the big ones come here to seek the monster muskellunge, big slugging fighters that ask no quarter when hooked and test your mettle as a fisherman. Get a guide that knows where their meeting place is, and prepare yourself for top thrills in angling. You are never a real fisherman until you graduate by hooking a fighting Muskie.

Visit the Indian Schools

We have two Indian residential schools that will afford you a visit of interest and education. St. Mary's, Phone 8095, located near the Devil's Gap, or Cecilia Jeffrey, Phone 6350, located at Round Lake on the way to Rabbit Lake via the east town road. Children come off the Ojibway reservations and secure modern education, and also learn to farm, care for livestock, etc. Modern schools with every facility. A few years ago Cecilia Jeffray had a band of Indian children that won honors at the world-famous Winnipeg Music Festival.

Visit the Airport—Go Flying

Kenora has two landing places for visiting aircraft. One in the bay opposite the hospitals for seaplanes, which you can see at the Second Street dock, and on First Avenue South, and arrange for TRIPS OVER BEAUTIFUL LAKE OF THE WOODS. The second at Margach, six miles northeast of town for landplanes. Follow the east road to Rabbit Lake and on via the signs where you will see a line-up of visiting planes from the United States and other points, sometimes twenty and thirty in number. A real landing field used by Trans-Canada Airlines.

Visit the Fish Hatchery

Another spot of great educational interest to the young people as well as to grown-ups is the Ontario Provincial Fish Hatchery. Follow the Lakefront Drive east, and go down the hill to the Hatchery. Here you will see in season, millions of whitefish, or pickerel, or lake trout and speckled trout. Believe it or not, the trout are fussy eaters and actually exist on a diet of liver in the last few weeks. The young people will find it exceptionally interesting.

Keewatin Flour Mills

Have you seen a modern flour mill? If not arrange to visit the Lake of the Woods Milling Company plan at Keewatin. Trips can be arranged through the Kenora Municipal Bureau or by phoning the mill office. This has a historical significance for it was the first mill built in Canada over half a century ago, and stands as a model of efficiency and monument to the courage and enterprise of Canadian pioneers. The mill is the industry around which Keewatin is built, and supplies the flour and bread that Canadians enjoy.

Laclu and Black Sturgeon

A FEW MILES WEST OF KENORA and reached by a winding colorful road is Laclu, a favorite holiday spot for anglers and those seeking rest and recreation. Go west of Keewatin five miles and follow the loop road to the right. It takes you around a very interesting farming country and brings you some lovely scenery and charming lakes.

Black Sturgeon also takes you off the regular roads. Go past paper mill or Rabbit Lake and follow bush road to Black Sturgeon.



Visit the Norman Dam

A number of years ago the flow of the waters of the Lake of the Woods were placed under regulated control of the Lake of the Woods Control Board and when the lake level drops below 1056 or exceeds 1061 it comes under the control of the International Joint Waterways Commission, and spilling takes place at the Norman Dam. Here Kenora's electric energy is generated, and here the waters in flood times rush through the dam in an angry roar. Some nice fishing too, and a scene of real interest. Just go to Norman, Kenora's west suburb, and into the dam area by going north and passing over the railway bridge, just opposite the Norman Hotel.

Annual Agricultural Fair

During the last week in August the annual Agricultural Fair and Flower Show of the Kenora Agricultural Society is held in the Thistle Rink. Here you will be surprised by the beauty of the floral exhibits, and the size, standard and quality of our farm produce, grown on the innumerable small farms immediately to the north of us. Here also will be found the midway and all sorts of entertainment for the young people. An evening or an afternoon well spent in visiting this interesting annual exhibition.

Dancing Every Night in Summer Months

At the Kenora Rowing Club building, right on the Main street and built out over the lake. Off shore breeze, cool and spacious. Name bands, and fine dance floor. Phone 155, no reservations. Small admission charge.

OTHER DANCES ARRANGED REGULARLY ANNOUNCED BY PLACARD OR IN LOCAL NEWSPAPERS.

Roller Skating every night, a new thrill here and a popular one.

Theatres

Three modern theatres—Derry's Palace Theatre, Kenora; Bijou Theatre, Kenora, and Wright Theatre, Keewatin, feature lastest movie attractions daily (Except Sundays).

Municipal Tourist Bureau

Kenora maintains an all-year-round Municipal Tourist Bureau, at which all visitors can secure tourist information, be it about resorts, camps, hotels, restaurants, roads, maps, folders, etc., and in which is available comfortable rest rooms, fully equipped with all conveniences. Here you can call and make yourself at home and be warmly welcomed.

The C.P.R. Depot Gardens

One of the show places is the C.P.R. depot gardens, adjacent to the railway station and the Legion Club rooms. Here the loveliest of flowers are always in bloom during the holiday season, and the gardens are regarded across Canada as being one of the most attractive in a long list of lovely depots.

Ontario Receptional Centre

Between Kenora and Keewatin, the Ontario Travel Bureau maintains a Reception Centre where visitors should register coming into the Province or going out. Here you will be warmly welcomed and a nice cup of tea provided to our American visitors as a token of welcome and hospitality.

Lawn Bowling

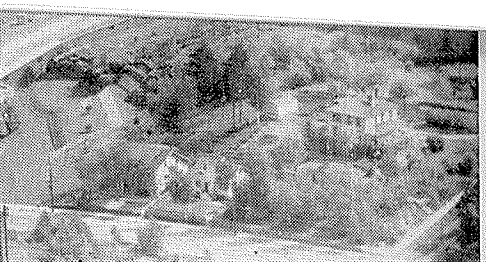
You can enjoy lawn bowling or watch the games at the Kenora Lawn Bowling Club.

Bowling Alleys

If you like bowling, games can be arranged at the Lake of the Woods Bolodrome on Matheson Street, or at the Memorial Building, Keewatin.

Legion Club Rooms

War veterans will find a warm welcome at the Canadian Legion club rooms near the C.P.R. depot. Billiards can be enjoyed there and at billiard parlors around town. There is also a Legion Club Room at Keewatin.



SERVICE CLUBS AND ORGANIZATIONS

THE KENORA BOARD OF TRADE (similar to the Chamber of Commerce in the United States, meets the first Monday of each month, in the Council Chambers at 8 p.m., except during July and August.

THE KENORA JUNIOR CHAMBER OF COMMERCE. Meetings the first and third Thursdays of each month in the Hotel Kenricia at 8 p.m.

THE KENORA TRADES AND LABOR COUNCIL meets in the Council Chambers, Kenora, on the second Friday of each month.

THE KENORA ROTARY CLUB meets at 12.15 p.m. each Monday in the Hotel Kenricia.

THE LIONS CLUB OF KENORA meets the second and fourth Tuesdays of each month in the Hotel Kenricia at 6.30 p.m.

THE KENORA KINSMEN CLUB meets alternate Mondays in the Hotel Kenricia at 6.30 p.m.

POSTAGE RATES

Our American visitors are advised that Canadian postage rates are different. Letters are 4 cents; Postcards 3 cents. Airmail, 7 cents for the first ounce, 4 cents per additional ounce.

National Anthems

When attending theatres, don't forget Canadians play the "National Anthem" at the conclusion of a program. All remain standing at attention during this anthem. At concerts they are frequently opened with "O Canada," and closed with "The King." To know this may save you some embarrassment.

The Public Library

The Kenora Public Library is a Carnegie library and has a wonderful selection of books running into thousands. Newspapers of all kinds are available and can be scanned in the library in comfort.

Health Unit

The health problems of the twin towns and district are looked after by the new Kenora-Keewatin Area Health Unit, which supervises health and sanitation problems.

The Post Offices

Dominion government post offices are to be found in Kenora and Keewatin, and your postage, money orders, etc., problems will be handled there.

Bus Depots

The local Bus Depot is located on Main Street South. The Winnipeg bus leaves from this depot.. The bus to International Falls and Red Lake leave from the International Transit office on Second Street South, opposite the Hotel Kenricia.

Telegraph Services

The Canadian Pacific Railway Telegraphs has an office on Second Street South, and when this is closed wires can be sent from the C.P.R. depot on a twenty-four hour service.

THE CHURCHES

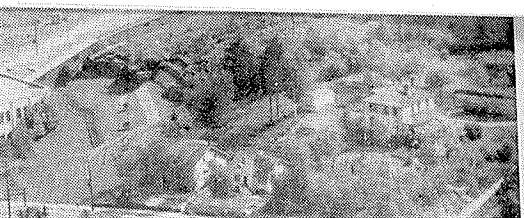
KENORA

Knox United Church
Corner 5th Ave. S. and Second St. South.
Services: 11 a.m., June, July and August.

First Baptist Church
Corner of 4th Ave. and Railway Street.
Services: 11 a.m. and 7 p.m.

Gospel Hall
Corner Second St. South and 7th Ave. South.
Services: 11 a.m. and 7 p.m.

Church By the Side of the Road
Chipman Street.
Services: 11 a.m. and 7 p.m.



THE CHURCHES

St. Alban's Pro-Cathedral
Main Street.
Services: 11 a.m. and 7 p.m.
Holy Communion, 2nd and 4th Sundays at 8.30 a.m.

Salvation Army
Matheson Street South
Services at 11 a.m. and 7 p.m.

Bethesda Lutheran Church
Lakeside.
Services: 11 a.m. and 7 p.m.

Lakeside Baptist Church
Lakeside.
Services: 11 a.m. and 8 p.m.

Ukrainian Greek Catholic Church
Fourth Street North.
Services: 11 a.m. and 7 p.m.

Presbyterian Church
Corner 4th Ave. South and Second St. South.
Services: 11 a.m. and 7 p.m.

Norman Lutheran Church
Norman.
Sunday School, 10 a.m.
Service: 8.15 p.m.

Bethlehem Lutheran Church
Laclu.
Service: 2.30 p.m.
Sunday School: 3.30 p.m.

Full Gospel Assembly
(Pentecostal).
430 Third St. South.
Services: 11 a.m. and 7 p.m.

Notre Dame Church
First Street North
Services: 7.30 a.m., 9.00 a.m. and 10.30 a.m.

KEEWATIN

Keewatin United Church
Keewatin.
Sunday School, 10.30 a.m.
Services: 11.30 a.m. and 7 p.m.

St. James Anglican Church
Keewatin.
Service: 11 a.m.

St. Louis' Church

	Keewatin a.m.	Norman a.m.
June 5	9.00	10.30
June 12	10.30	9.00
June 19	9.00	10.30
June 26	10.30	9.00

We alternate every Sunday during the summer months.

UNITED STATES CUSTOMS EXEMPTIONS

UNITED STATES VISITORS may take back merchandise to the value of **$200.00 duty and tax free, once** every **31 days,** provided resident has been in Canada more than **48 hours.**

NOTE: This exemption may include tobacco, cigarettes, foodstuffs . . . 100 cigars and not more than one wine gallon of alcoholic beverages.

An additional exemption of $300.00 is allowable **once** every **six months** provided resident has been in Canada more than **twelve days.**

NOTE: This exemption **excludes** tobacco, cigarettes, cigars and alcoholic beverages.

IMPORTANT

For articles acquired in Canada declaration must be made by returning residents at Port of Entry on U.S. Customs Form 6059 and exemption claimed on articles not accompanying residents and/or articles shipped in bond.

CUSTOMS HINTS

To facilitate re-entry into the United States have your sales slips and purchase invoices, covering articles acquired during your visit to Canada, readily accessible. List your purchases before you reach the border. Pack your baggage in a manner that makes inspection easy. If possible, pack separately articles acquired in Canada. This co-operation will speed you through Customs.

For full details of border crossings and customs regulations write for "How to Enter Canada"

CANADIAN GOVERNMENT TRAVEL BUREAU
Ottawa, Ontario, Canada



FISHING SEASONS IN ONTARIO

Black Bass: June 29th to October 15th, except—
(a) River St. Clair, Lake St. Clair, Detroit River, Lake Erie and Niagara River from Lake Erie to Niagara Falls: June 22nd to December 15th. Kenora: July 1st to October 15th

Maskinonge: June 29th to October 1st, except—
(a) River St. Clair, Lake St. Clair, Detroit River, Lake Erie and Niagara River from Lake Erie to Niagara Falls: June 22nd to December 15th. Kenora: July 1st to October 15th.

(b) North and west of and including the French and Mattawa Rivers and Lake Nipissing: June 20th to October 1st.

Speckled Trout, Brown Trout, Rainbow Trout and Aurora Trout: From April 19th to September 15th.

Lake Trout: No closed season in Great Lakes, Georgian Bay, North Channel, Bay of Quinte and River St. Lawrence. Inland Waters:

(a) South of and excluding the French and Mattawa Rivers and Lake Nipissing, from November 6th to October 5th, next following.

(b) North and west of and including the French and Mattawa Rivers and Lake Nipissing: November 1st to October 4th, next following, except—
(i) Districts of Rainy River, Kenora, Thunder Bay, Patricia and Cochrane: No close.

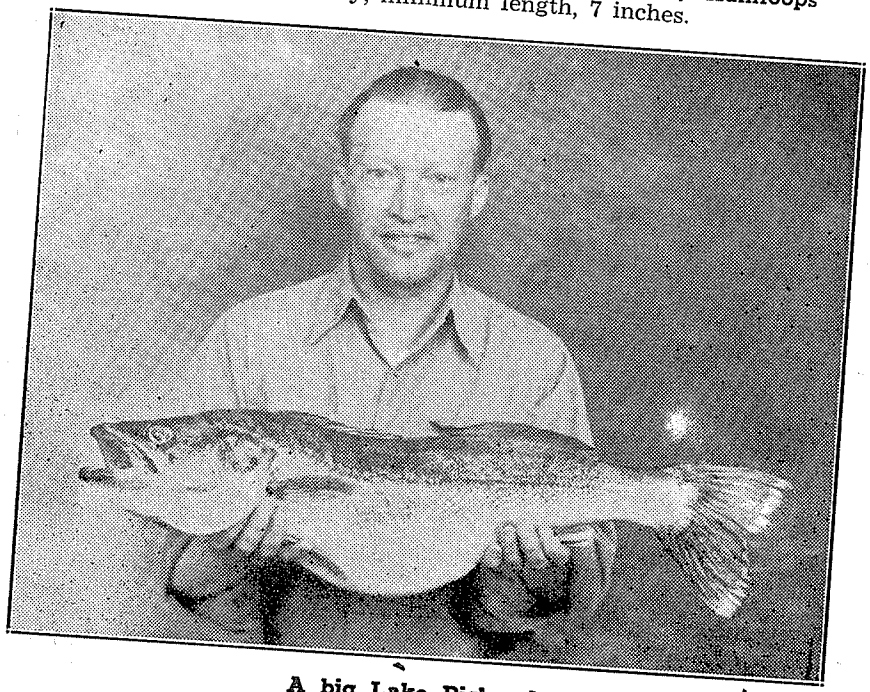
Yellow Pickerel and Pike: No close season in Great Lakes, Georgian Bay, North Channel and their intervening international connecting waters and River St. Lawrence. Inland Waters:

(a) South of and including the French and Mattawa Rivers and Lake Nipissing. Pickerel—from May 15th to December 31st. Pike—May 15th to March 31st.
(b) North and west of and excluding the French and Mattawa Rivers and LakeNipissing. Pickerel—from May 15th to April 14th, next following. Pike—no close season if taken by angling.

(NOTE: All dates herein mentioned are inclusive)

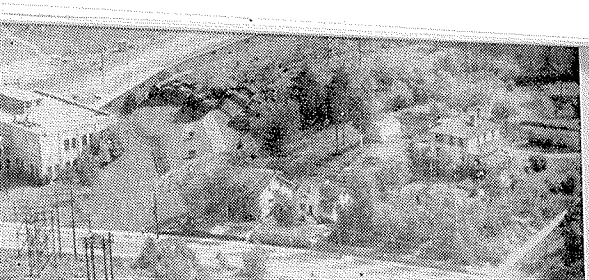
CATCH LIMITS

Black Bass: 6 per day; minimum length, 10 inches.
Maskinonge: 2 per day, 14 per season; minimum length, 30 inches.
Yellow Pickerel: 6 per day; minimum length, 13 inches.
Pike: 6 per day, regardless of length.
Perch: 25 per day (except Ladyy Mindemoya, 10 per day).
Lake Trout: 5 per day.
Rainbow Trout, Brown Trout, Aurora Trout, Kamloops Trout: 5 per day; minimum length, 7 inches.



A big Lake Pickerel

Every year big fish are caught in Lake of the Woods and tributory waters. If you catch one enter it in the Kenora Hunters' and Anglers competition.



CATCH LIMITS (Continued)

Speckled Trout: 20 per day, or 10 pounds weight (except Norfolk County, 10 per day, or 5 pounds weight); minimum length 7 inches.

Crappies: 20 per day.

License Fees

Individual.....$6.50 Family.....$9.00



RESORTS

Barney's Ball Lake Lodge
50 miles north of Kenora. Accessible by plane only. Office: Kenricia Hotel, Kenora.

Chaloner's Housekeeping Cottages
On Lake of the Woods and Trans-Canada highway. City water, electric light. Write or wire Box 8, Kenora.

Gaudry's Canadian Camps
On Dryberry Lake, Kenora-Fort Frances highway. Rates on application. Write or wire.

Doug Hook's Separation Lake Camp
On English River. Reached by plane only. 35 miles north of Kenora. Office: Second Street Dock. Phone 8532.

Houghton's Rabbit Lake Tourist Camp
On Rabbit Lake, one mile north of Kenora Post Office. Follow the signs. Phone 7158.

Mel's Canadian Camps
Long Bay, Lake of the Woods. 54 miles south of Kenora on Fort Frances-Kenora highway. U.S. plan and housekeeping cabins.

Webb's Camps
Laclu, 7 miles west of Kenora, six miles north on loop road. American plan and L.H.K. Outpost camps.

Lawrence Oien
Houseboat accommodations. 527 First Street S., Kenora. Phone 6203.

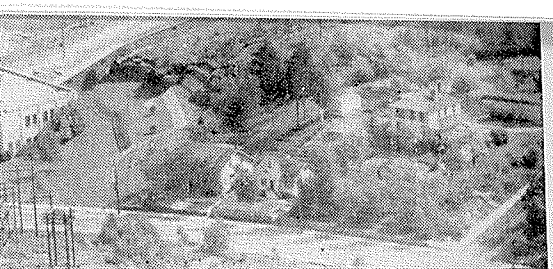
Pines Tourist Camp
Rabbit Lake. Cabins, store, refreshments, groceries. Hunting, fishing. Write or wire. Ph. 6068.

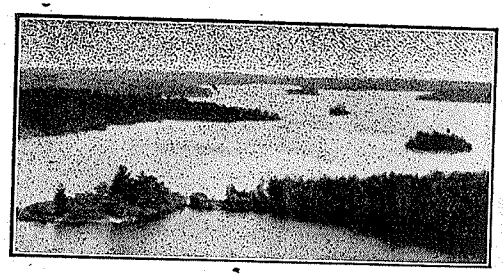
Red Indian Lodge
Whitefish Bay, Sioux Narrows, Ont. C. Crist, prop. American plan, also L.H.K. cabins. Electricity, cruisers, houseboat.

Redden's Camps
9½ miles south of Kenora. On Longbow Lake and Bigstone Bay. Housekeeping cabins. Fishing trips.

Shelton's Canadian Camps
Six miles east of Kenora, highway 17. American plan. Electricity, showers. Write or wire R. A. Shelton, Prop.

Cameron Camps
On Golf Course Bay. Housekeeping cabins, excellent dining room. Ph. 7695.





HOTELS

KENORA

The Chalet
Accommodation for 24 guests. Catering to private parties and clubs. Rates on application. Ph. 7195. A. M. Welsby, manager.

Dalmore Hotel
117 Main Street South. Phone 6152.

Kenricia Hotel
Corner Main and Second Streets S. Largest in town. Phone 6461.

Kenricia Kabin Kourt
Norman, one mile west on Trans-Canada Highway. Modern cabins, restaurant. Phone 6282.

Norman Hotel
Two miles west of Kenora. Phone 6721.

Store Guide

GROCERIES

KENORA

Clayton's Finer Foods

305-7 Second Street S. Groceries and meats. Ph. 6433.

Foster's

Distributors for Ontario Pure Syrup, Ryley's Toffee, Huntley & Palmer's English Biscuits. Flowers.

J. B. Grocery

14 Matheson Street S. Groceries and meats. Ph. 6421.

Jewel Stores (Ontario) Ltd.

110 Main Street S. Groceries, fruits, meats. Ph. 8150.

North End Store

Groceries, meats, supplies. 500 Third St. N. Phone 6487.

Pykerman's Store.

6 Rupert Road, opposite mill. Light lunches, confectionery, groceries. Ph. 7177.

Romaniuk's Store

533 Railway Street. Groceries, meats. Ph. 8644.

Safeway Stores Limited

Main Street South. Groceries, Meats.

Williamson's Grocery And Confectionery

715 First Street South, opposite ball park. Groceries, meats, ice cream, drinks. Phone 7803.

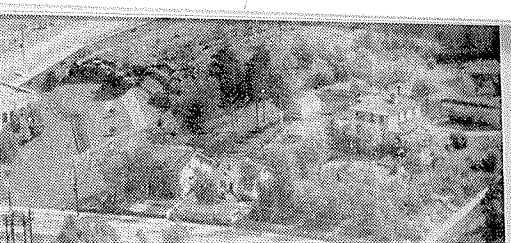
KEEWATIN

Olson's Foodateria

Centrally located. Groceries, fresh meats, fresh fruits. Ottawa Street. Phone 2214.

J. C. Scott & Son

Groceries, meats, general store. Ottawa Street.



HARDWARE AND SPORTING GOODS

KENORA

Kenora Sport Shop

Licenses, woollens, minnows, fishing tackle. Information. 205 Main St. S. Phone 6872.

Williams Hardware Company Limited

Sport goods, hardware, electric, camp supplies, boats, fishing tackle. 212 Second Street S. Phones 6471 and 8227.

KEEWATIN

North American Lumber and Supply Co. Ltd.

Ottawa Street. Hardware, sport goods, camp supplies. Phone 2219.

SPORTMEN'S SERVICE

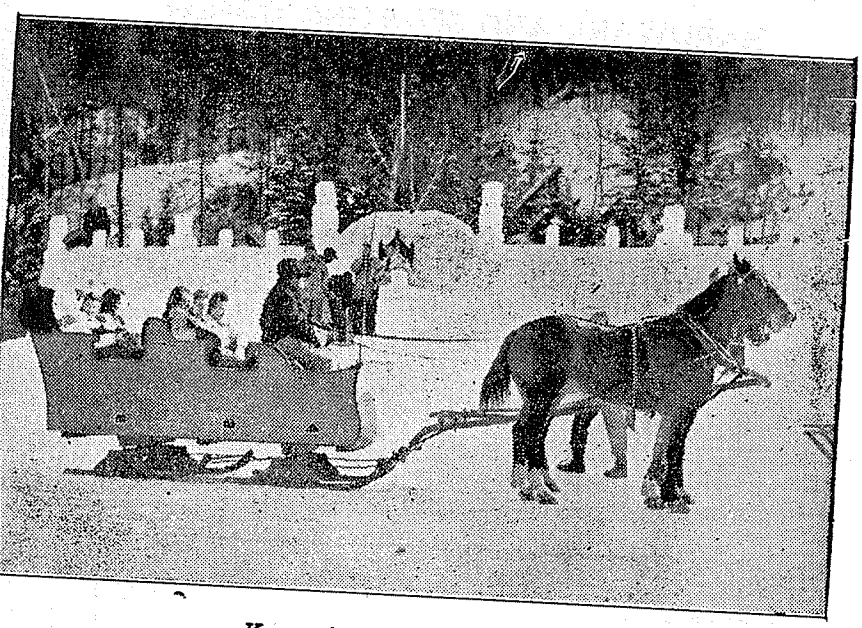
Kenora Locker Plant Co. Ltd.

Fish filleted, packed, shipped. Fresh meats, game storage. Second Street S., Kenora.



Wild Life Abound

Do you like to hunt with a camera? You will have lots of opportunity to take pictures like this.



Kenora's Winter Festivities

A scene from one of our popular winter Snow Carnivals, which help to provide winter sports during the early month of the year—a brilliant affair of Queens, bearded men, sports, dances, outdoor events.

MEN'S WEAR

Beatty's Store

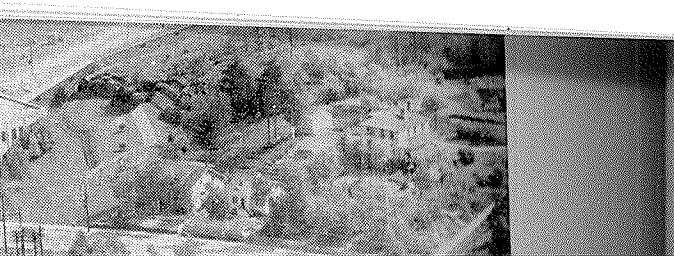
Men's clothing and footwear, high top boots, rubber footwear, rain coats, wool sport shirts, short jackets, and blankets. 138 Main Street S. Phone 6722.

Arthur Pitt Limited

Men's and boys' clothing. 39 Main Street S. Ph. 6479.

Zeal & Gold

Men's wear and footwear. 222 Second Street S. Phone 6436.



LADIES' WEAR

The Fashion Dress Shoppe

Ladies' and Children's Ready to wear. 311 Second Street S. Ph. 6233.

Madge McDole

Woollens, Irish linens. 126 Main Street South. Phone 7812.

E. S. Linkletter Limited

Ladies' and Children's wear. Kenwood blankets. 215-217 First St. South. Phone 8652.

Arthur Pitt Limited

Ladies' and Children's wear. Hudson Bay blankets, fine woollens. 39 Main Street S. Ph. 6479.

Zeal & Gold

Ladies' and Children's wear. 222 Second St. S. Phone 6436.

JEWELLERY AND GIFT SHOPS

Brennan's Limited

KENORA, Fort Frances, Winnipeg. English bone china, diamonds, watches, silverware. 210 Main Street South.

Breslauer & Warren

Jewellers, gifts, chinaware. 130 Main St. S. Phone 7912.

E. M. Newman, Jewellers

English china, jewellery, C.P.R. watch inspector. 104 Main St. South. Ph. 8301.

J. H. Penner

Jewellery and Gift Shop. China, jewellery, gifts, novelties. 243 Second St. South. Phone 8382.

DRUG STORES

KENORA

Johnson's Pharmacy

Rexall Drugs. Delivery service. 116 Main St. S. Phone 7412.

Johnson's Pharmacy

Drugs and Soda Bar. Corner Second St. S. and Matheson St. Ph. 6292.

Tilley's Drug Store

Corner Second St. S. and Matheson St. Ph. 7913.

KEEWATIN

Johnson's Pharmacy

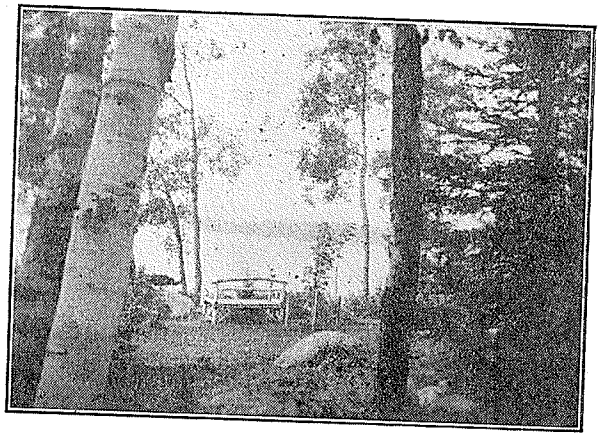
Ottawa Street. Phone Keewatin 2202.

DRY CLEANERS

Acme Cleaners
Expert and fast dry cleaning, fur storage, 24-hour service. 120 Matheson Street. Phone 6459.

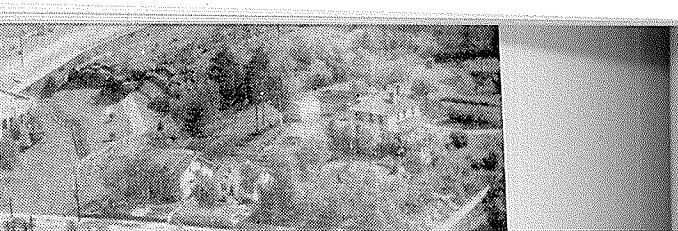
General Blacksmithing and Welding

R. L. Onarheim
323 First Street S. Welding and repair work. Ph. 6974.



A Quiet Spot at One of the Camps

Hundreds of places like this, restful and peaceful, are available to our visitors, at numerous summer camps throughout the district.



GARAGES

Dingwall Motors Limited
Ford and Monarch dealer. 230 First Street S. Phones 6484 and 2561 Also branches at Dryden and Sioux Lookout.

W. H. Marr Limited
Packard, Studebaker, International repairs. Tow truck. Esso gas. 400 Railway St. Phone 6404.

Subway Motors
11 Main Street S. Next to Post Office. Dodge, De Soto cars, trucks, service. Phone 7442.

Lake of the Woods Motors
Main Street S., Kenora. Gasoline and oil services, repairs. Texaco dealer. Phone 7722.

J. A. Link Limited
313 Second St. S. Gas, oil, storage, ice, coal. Repairs. Phone 6333.

Westario Motors Ltd.
345 Second Street S. Opposite Fire Hall. Chrysler, Fargo, Plymouth. Repairs, gas, oil. Phone 8133.

LAUNDRY SERVICE

Kenora Laundry
Pick-ups and deliveries. 45 Matheson Street S. Phones 6409 and 8184.

MARINE SERVICE

W. H. Marr Limited
Johnson motors, Kenmac boats, Universal inboard sales and service. 400 Railway St, Ph. 6404.

Marine Air Sales And Service
Gray Marine Engines. Repairs to all makes. North Star Dock. Phone 8432.

OUTBOARD MOTORS SALES & SERVICE

Dingwall Motors Limited
Evinrude motors and service. Dryden, Kenora and Sioux Lookout. Ph. 6484.

W. H. Marr Limited
Johnson Seahorse distributor. Repairs to all makes. 400 Railway St. Phone 6404.

Kenora Sport Shop.
Your Martin outboard dealer. Parts and service. 205 Main St. S. Phone 6872.

Williams Hardware Co. Ltd.
Evinrude sales and service. Peterborough boats. 212 Second St. S. Phs. 6471 and 8227.

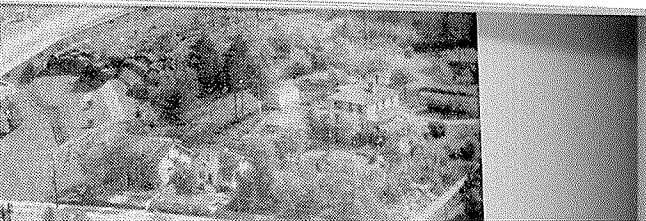
PHOTOGRAPHERS

Lakewood Studio
A Complete Photographic Service. Portraits, developing, printing. 227 First St. South. Phone 7362.

SHOE STORES

Beatty's Store
Shoes for all members of the family. Sport shoes, novelty slippers.
138 Main St. S. Ph. 6722.

W. A. McLeod & Co.
The Family Shoe Store. Shoes for old and young.
150 Main St. S. Ph. 7222.



AIRLINES

Ontario Central Airlines
Charter trips to all parts of Kenora and Patricia districts. Office: Second St. Dock. Phone 6266.

Parsons Airways
Charter and sightseeing trips. Non-scheduled service to Woman and Confederation Lake area. Second St. Dock. Phone 6166.

AIRCRAFT REPAIRS AND SERVICE

Marine Air Sales And Service
North Star gas and oil products. North Star dock. Phone 8432.

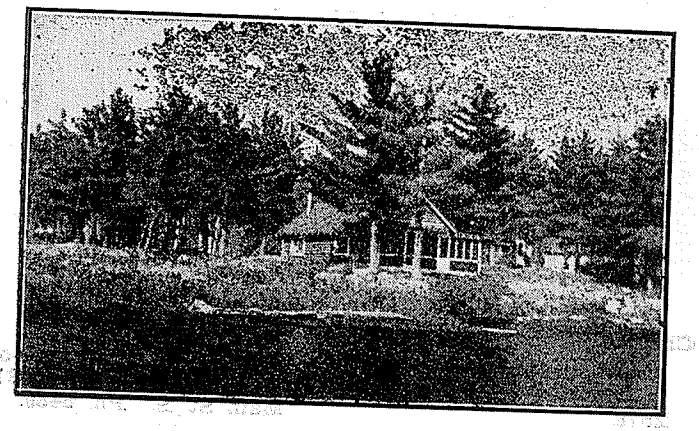
Ontario Central Airlines
Repairs, gasoline, oil sales and service. Second St. Dock. Phone 6266.

Auto Accessories

Canadian Tire Corporation (Associate Store)
219 Main St. South.
Auto parking. Ph. 7472.

Antiques and Novelties

Vernon's Flower and Gift Shop
Hotel Kenricia.
Phone 8682.



BAKERIES

Jackson's Bakery And Tea Room
Restaurant, full meals. Laura Secord chocolates. Main St. S., Phone 8562.

Kenora Bakery
Third Street North. Rye bread, cakes, pies. Ph. 6569.

Lakeside Bakery
Light lunches, confectionery, bakery supplies, cigarettes. Phone 7717.

Sunrise Bakery
Bread, pastries. 12 Matheson St. South. Phone 6352.

Boat Rental

Mastercraft
Power boats, skiffs, rowboats. 321 First Avenue South, on the lake front. Phone 7953.

Book Store

Henry's Book and Gift Store
123 First Street South. Phone 8552.

Bus Line

Excel Coach Lines Ltd.
Serving Kenora, Norman, Keewatin and Rabbit Lake. See Kenora and surroundings by bus. Information available at the Kenora Bus Depot. Phone 7172.

DAIRIES

Charron's Dairy
Dairy products. Daily delivery service. Phone 2576.

Lakeland Dairies Ltd.
Dairy products, Land-o-Pines ice cream. 231 Main St. S. Ph. 6489.



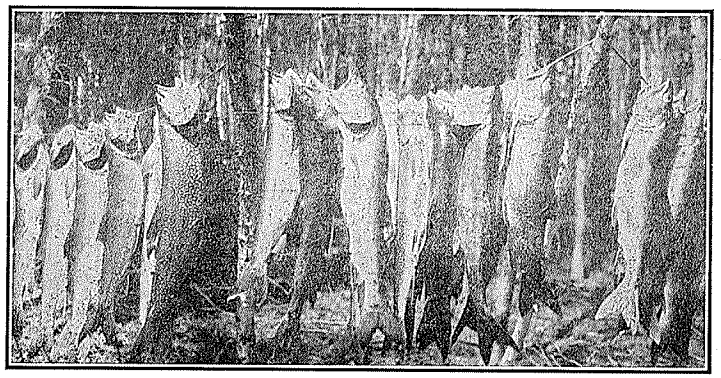
CONTRACTORS, LUMBER SUPPLIES

Bergman & Nelson Ltd.
Lumber, paint, hardware. Summer camps, knotty pine custom built furniture. Chipman Street. Phone 6502.

Lindstrom & Nilson Ltd.
Contractors, builders and painters supplies. Dealers in General Electric appliances. 227 Second St. S. Phone 6446.

KEEWATIN

North American Lumber & Supply Co. Ltd.
Lumber, builders' supplies, hardware, paints, camp supplies. Ottawa Street. Phone 2219.



Are You a Fisherman?

Lots of opportunity here to get days and days of real angling.

Propane Gas Sales and Service

Williams Hardware Co. Ltd.
Local representatives and distributors of Propane gas. 212 Second St. S. Phone 6471.

RESTAURANTS

The Depot Grill
Located in the Kenora Bus Depot. Meals, light lunches, fountain specials in pleasant up-to-date surroundings.

Jackson's Bakery And Tea Room
Full meals, lunches, refreshments. 129 Main St. S. Phone 8562.

Ken Cafe
Full restaurant service, meals, lunches, snacks. 251 Second St. S. Phone 7672.

Lakeside Bakery
Light lunches, snacks, ice cream, soft drinks, bakery products. 209 6th Street S. Ph. 7717.

The Ranoke
First class modern restaurant, full meals, lunch counter. Main St. Phone 8542.

KEEWATIN

Allan's Confectionery
Lunches, snacks, refreshments, tobaccos, campers' needs. Phone 2329.

SOFT DRINKS

7-Up Bottling Plant
Makers of 7-Up and Pepsi-Cola. 916 Park St. Phone 8084.

Clearwater Beverage Co.
Manufacturers of Coca-Cola. 444 6th Ave. S. Phone 8005.



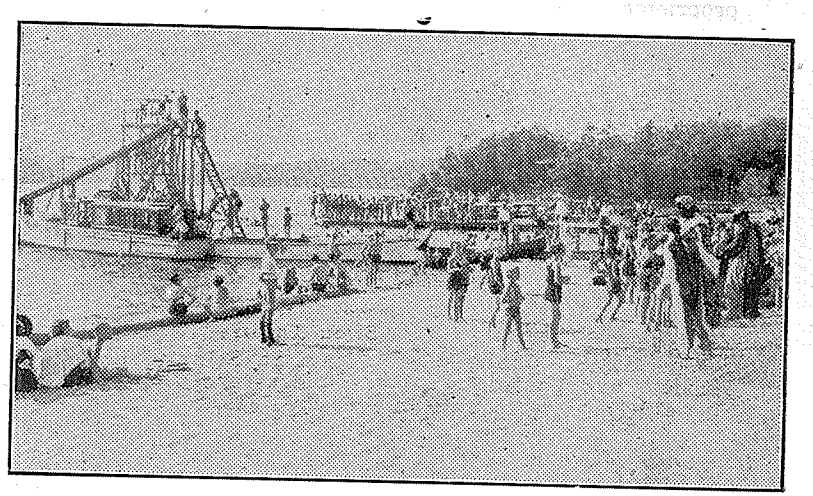
WOOLLENS, LINENS

E. S. Linkletter Ltd.
Kenwood Blankets. Ladies' and Children's wear. 215 First St. S. Phone 8562.

Arthur Pitt Limited
Woollens, linens, Hudson Bay blankets and products. Main St. South. Phone 6479.

Robinsons
Woollens, linens, tourist requirements. 120 Main St. South. Phone 7612.

Zeal and Gold
Woollens, etc. Specializing in holiday attire. 222 Second Street South Phone 6436.



TAKE THE KIDDIES TO CONEY BEACH

Reached by the Ferry Argyle II. in less than five minutes. Lovely sandy beach, dressing rooms, restaurant and refreshment booth and all other conveniences including picnic tables.

TAXIS

Checker Taxi
Radio equipped cars. Day and night service. Phone 6425.

Club Taxi
Radio equipped cars. 24 hour service. Phone 6441.

Dowd's Taxi
Day and night service. Phone 7822. Passengers fully insured. M. Beasant proprietor.

Excel Taxi
Day and night service. 131 Matheson St. South. Phone 6713.

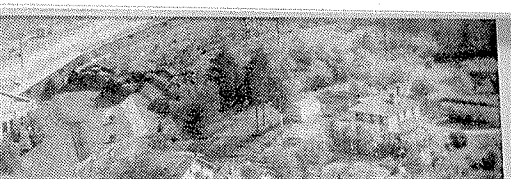
Radio Taxi and Bus Line
Redditt bus, 24 hour service. 200 Main St. South. Phone 7622.

★ ★ ★

THEATRES

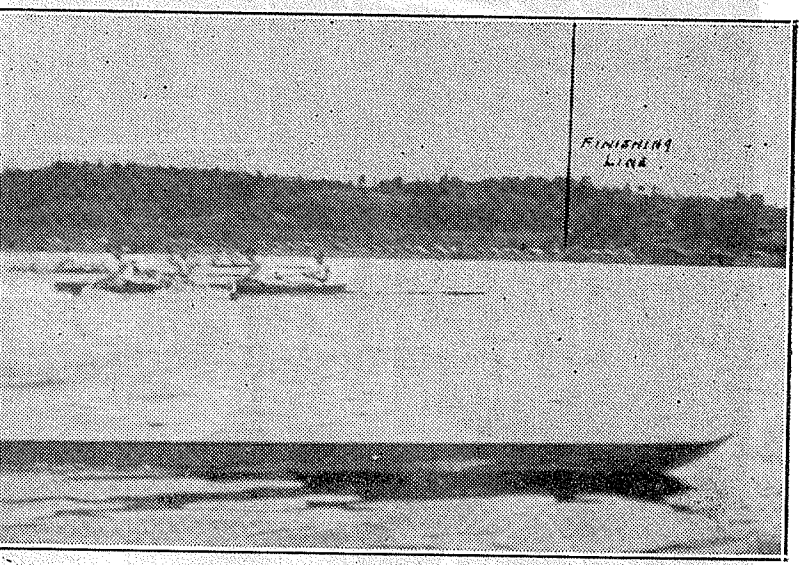
Derry's Palace Theatre
Second St. S. Changes Mondays and Thursdays. Phone 8313.

Bijou Theatre
Main St. South. Changes Mondays and Thursdays. Phone 7322.





Ries Tuttle, outdoors writer for the Des Moines Register and Tribune examines the ear of a bear he shot this Spring. The animals ear had been slit in fighting and the shoulder also bore scars of deep claw marks.



Twice a year the Kenora Rowing Club stages regattas, with eights, fours, doubles and single shell competitions. Every five or six years we have the Northwestern International Regatta. On this course George Towns of Australia won the world's professional sculling championship from Jake Gaudaur in 1901.



Road Map of SOUTHERN ONTARIO

Scale 18 Miles to 1 Inch

0 2 4 6 8 16 24 32

REFERENCE

THROUGH PROVINCIAL AND U.S. STATE HIGHWAYS IN RED

OTHER HIGHWAYS IN BLUE DESIGNATED

HIGHWAYS

- Paved
- Gravel
- Earth Graded
- Under Construction
- Dual Highways
- Provincial and State Highway Numbers (22)
- Other Roads: Paved / Gravel / Earth

- U.S. Federal Highway Numbers (85)
- Mileage Between Stars * 16 *
- Air Lines
- Principal Airports
- Ferries (Fy.)
- Port of Entry
- Provincial Parks
- International Boundary

APPROXIMATE POPULATIONS OF CITIES, TOWNS AND VILLAGES ARE

- OVER 25,000
- 10,000 to 25,000
- 5,000 to 10,000
- 2,500 to 5,000
- 1,000 to 2,500
- 0 to 1,000

DESIGNED, COMPILED AND REPRODUCED BY THE CARTOGRAPHIC DIVISION OF

ROLPH-CLARK-STONE, LIMITED

TORONTO, ONTARIO, CANADA

Copyrighted All rights reserved

BLACK

STURGEON

LAKE

REDDIT ROAD

WINNIPEG

RIVER

RABBIT LAKE ROAD

INCINERATOR

RABBIT LAKE

MARGACH AIRPORT

OLD FORT IS.

RADIO STATION

CEMETERY

BRINKMAN ROAD

INDIAN SCHOOL

ROUND LAKE

ROCK LAKE

TUNNEL ISLAND

POWER HOUSE

PULP & PAPER CO

KENORA

SPR YARDS

CANADIAN

HOME STAKE ROAD

OF

TOWN

NORMAN
KEEWATIN
WINNIPEG

CJRL RADIO STATION

LAURENCE LAKE

RAILWAY

PACIFIC

BREAKNECK LAKE

COMEY ISLAND

WOODS

OF THE

GOLF COURSE

PROPOSED

TRANS

CANADA

HIGHWAY

HILLY LAKE

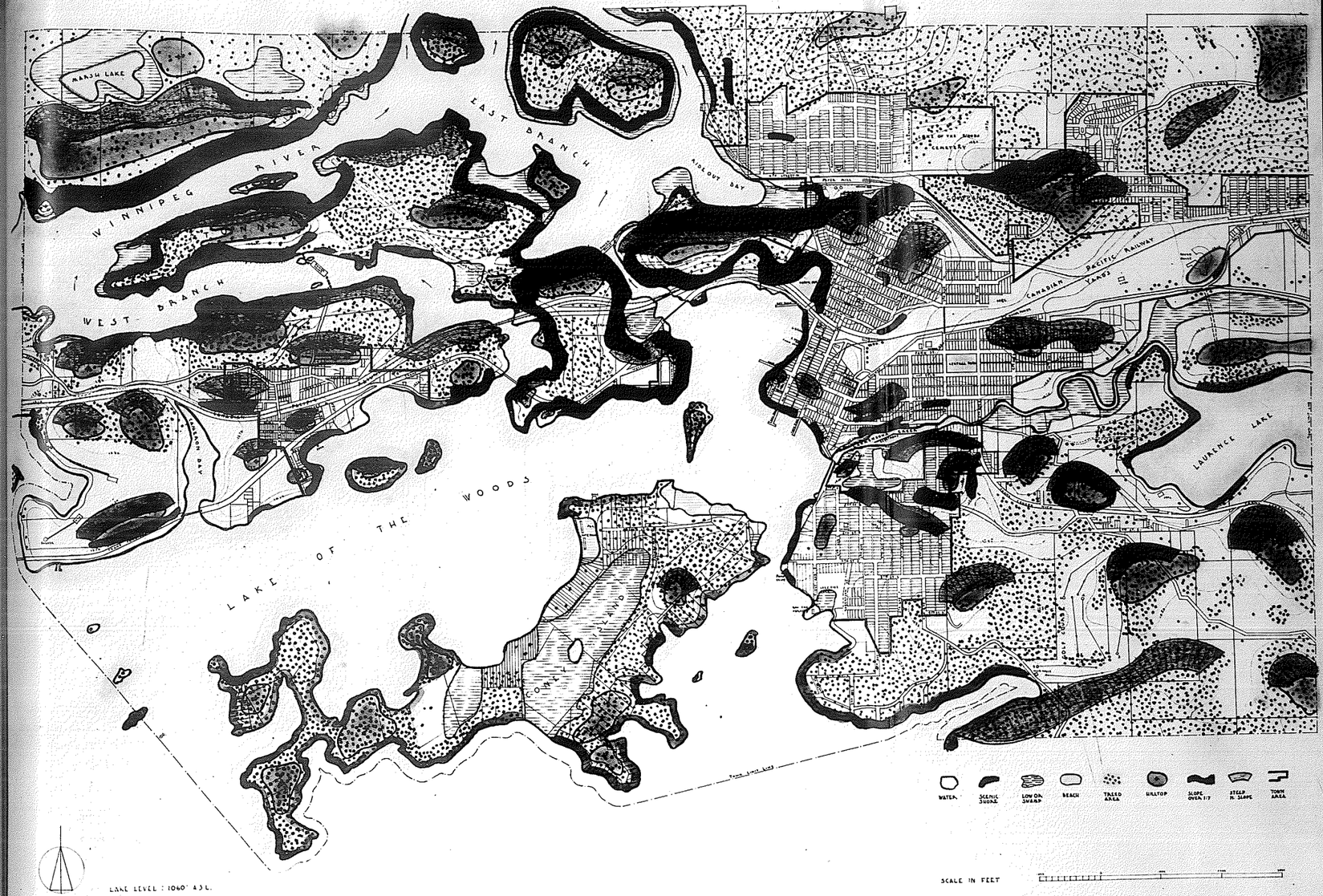
SCALE 1"= 40 CH.

LAKE OF THE WOODS

INDIAN RESERVE 38 B

FT. WILLIAM

FT. FRANCIS



TOWN OF KENORA

PHYSICAL FEATURES

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

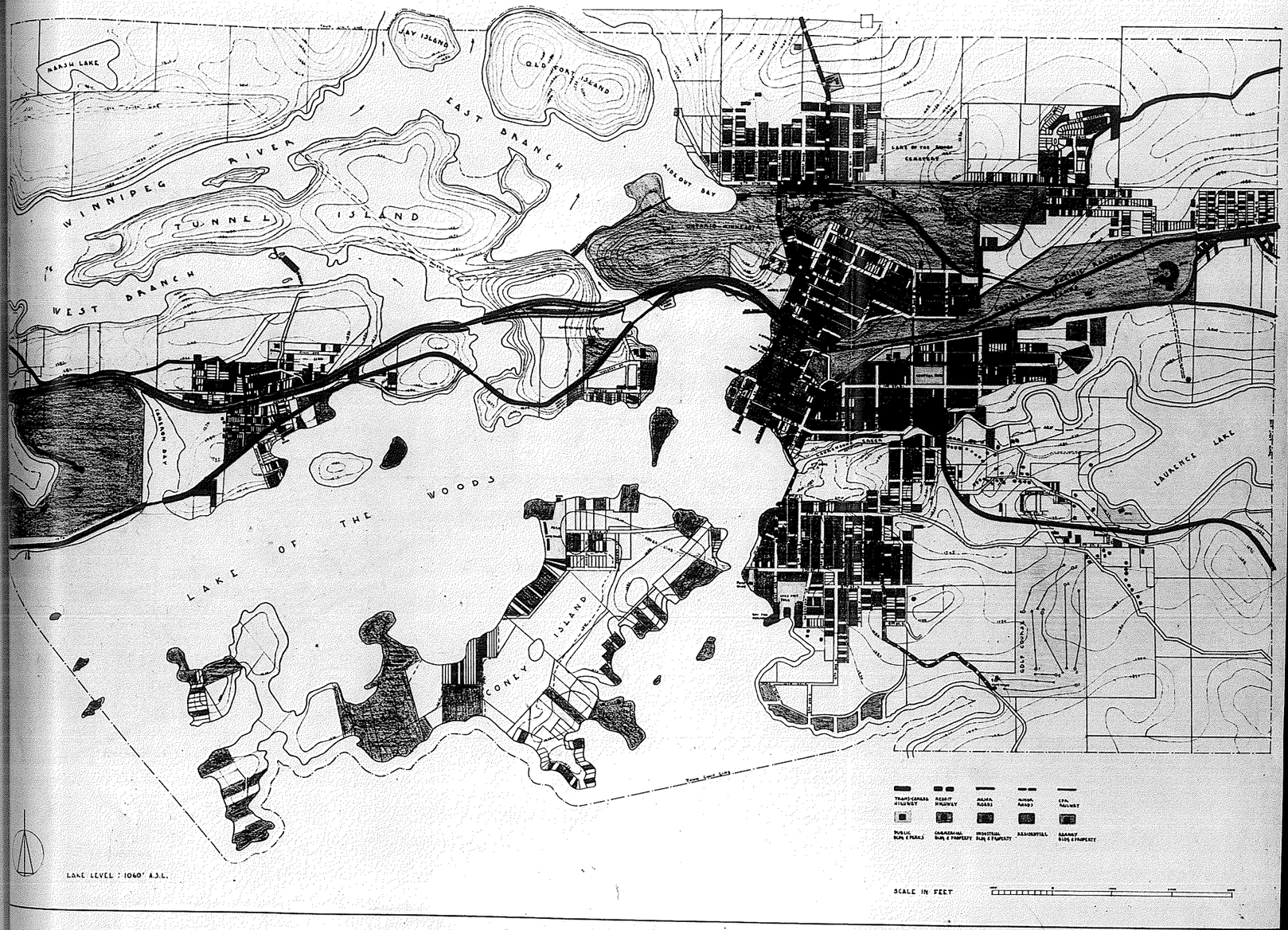
F. H. DECKS B. ARCH

1

LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

EXISTING COMMUNICATIONS



TOWN OF KENORA

EXISTING LAND USE

LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

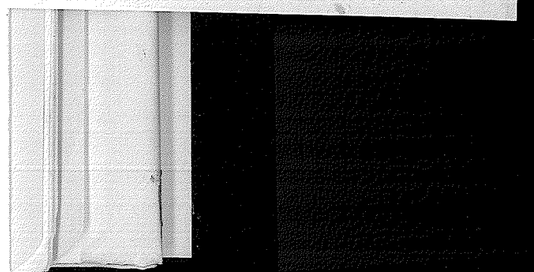
EXISTING COMMUNICATIONS

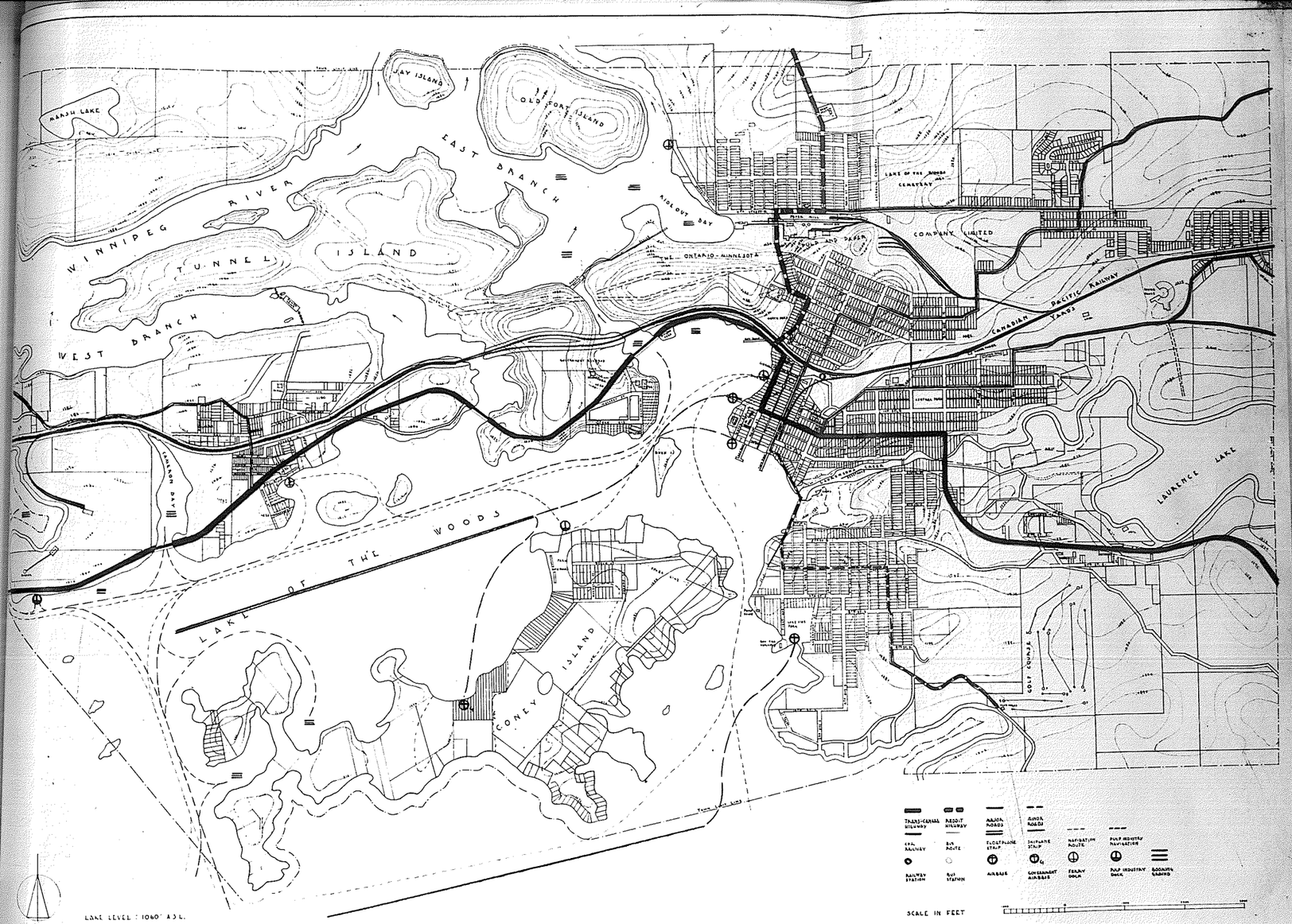
PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F H DEEKS B. ARCH

2





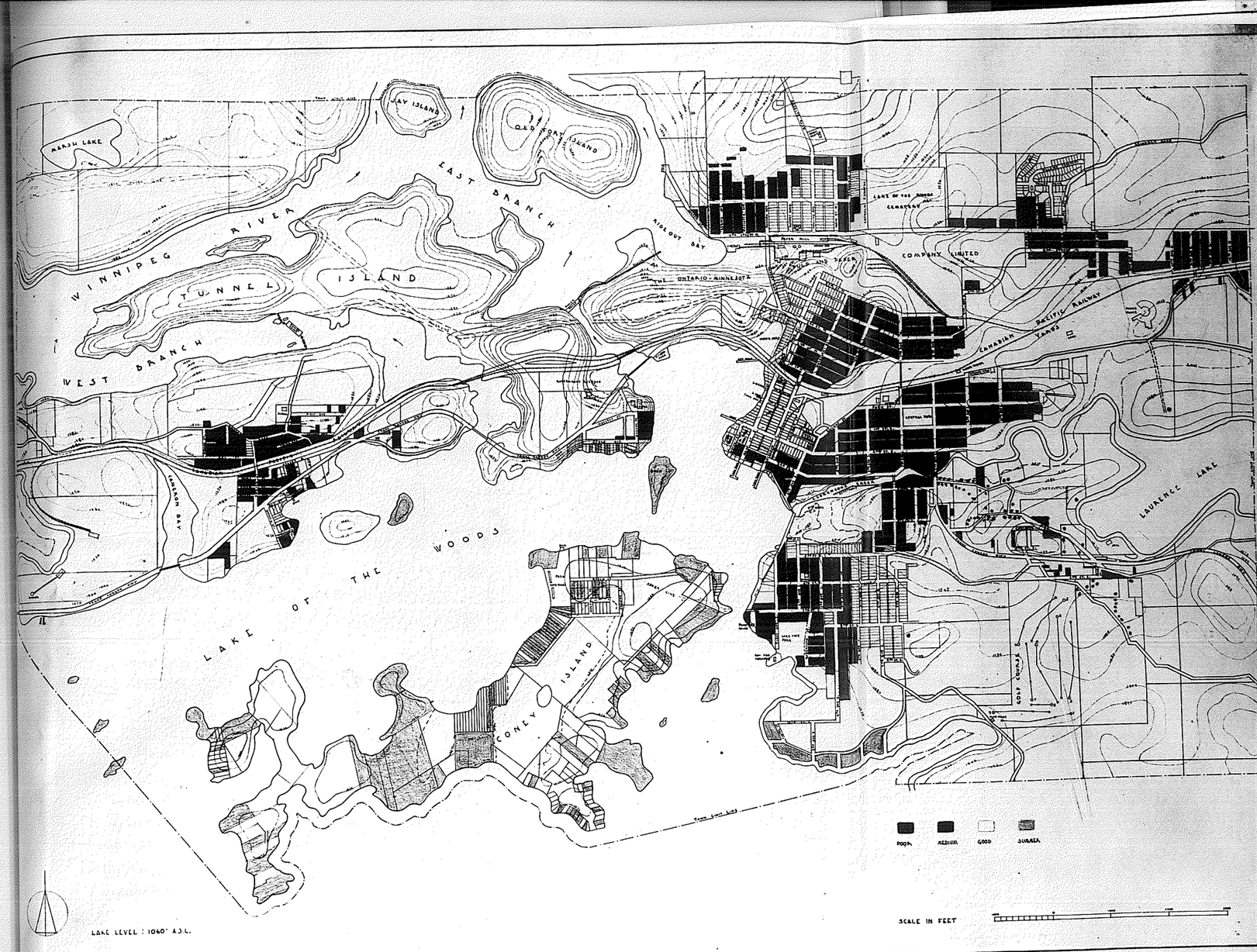
TOWN OF KENORA

EXISTING COMMUNICATIONS

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. H. BEERS B. ARCH



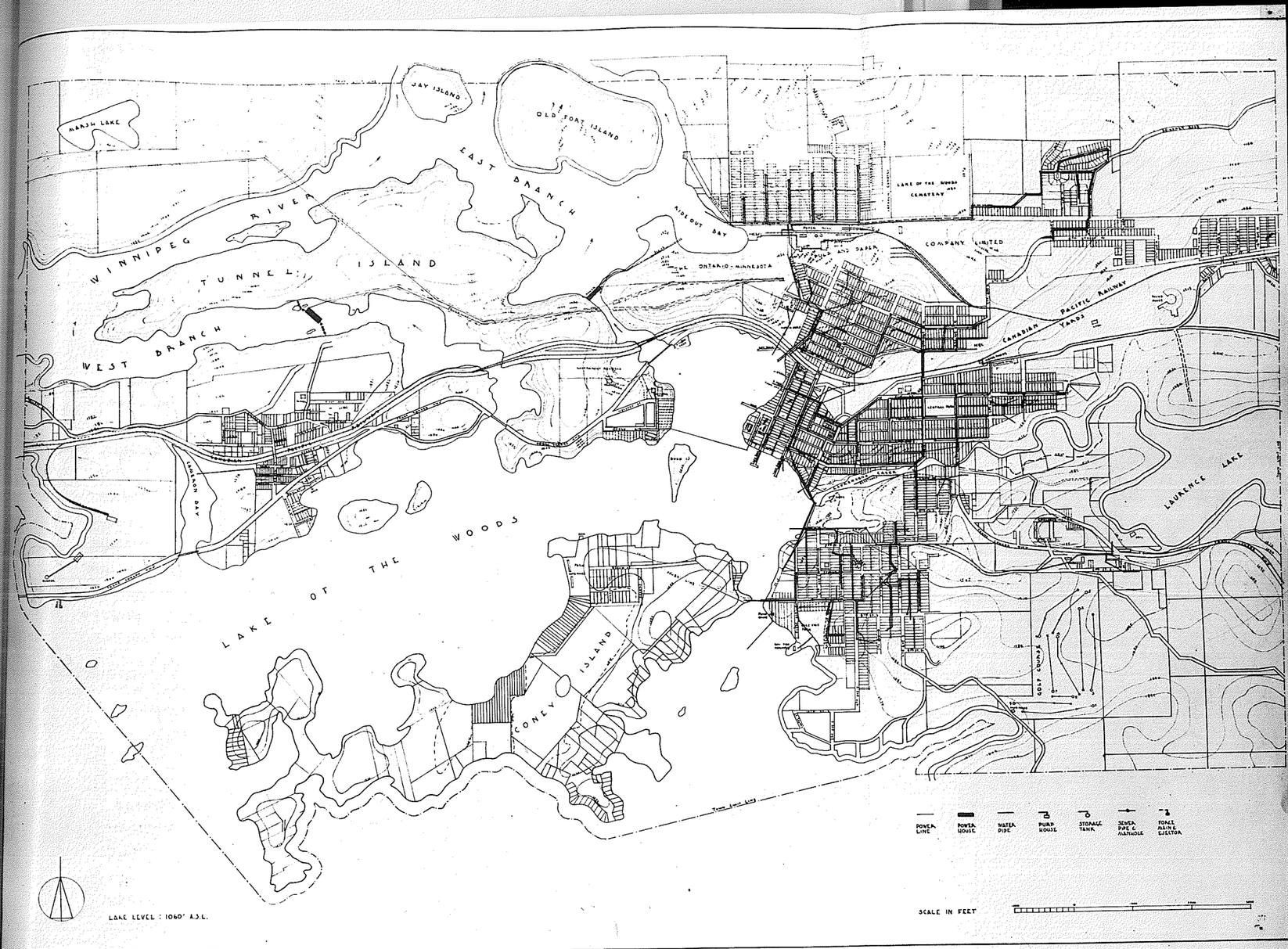
TOWN OF KENORA

EXISTING HOUSING

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F W DEEKS B. ARCH



TOWN OF KENORA

EXISTING PUBLIC UTILITIES

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. W. DEEKS B. ARCH

ASSUMPTIONS

for
PLANNING

ASSUMPTIONS FOR PLANNING.

"Only those who take leisurely what the people of the world are busy about can be busy about what the people of the world take leisurely."

Chang Ch'ao

The average town of today mushroomed it's pagoda roof shape carelessly out of the past into the atmosphere with little regard to the effect it's haphazard growth would have upon the inhabitants. We find in these towns large buildings built tightly into a congested centre, houses sprawled loosely between factory chimneys and peripheral grain fields trying vainly to grasp an existence out of rock. The various town funttions of working, living, playing and praying are muddled - only to be aggravated moreso by a confused circulation system. It is no wonder why man must work hard for his bread and has but little time left for his pleasure.

The method of solving these problems is "to organize the town into distinct areas for work, home and play ; to connect these areas by a road pattern in which traffic can flow easily ; and to surround the whole area by a well defined agricultural belt. Industry is planned as a zone adjacent to the railway and with immediate access to the regional road pattern. Housing is arranged as a series of distinct Neighborhood Units of from 6,000 to 15,000 people ; the Business Area is near the industry ; and the Main Shopping Centre planned between the housing and business areas."

These proposals might ensure a proper functioning of the Town but they by no means make the town. For instance, due weight must be given to geographical influences, the existing conditions of the town, and the problem of Civic Design where the planner is concerned mainly with the spaces between the buildings which allow good architecture to be born. But above all, the town should be planned to meet the economic and social requirements of it's inhabitants.

This report is to assist the proper functioning of the town. The planning scope is to cover all work of a development nature, but not of replacement, maintainance, or local improvement.

The planning period is twenty years and for an anticipated population of 10,300 within the municipal limits of the town of Kenora. This means that the population growth will be about 1,500 during the twenty year planning period.

METROPOLITAN PLAN - GREATER WINNIPEG

NEIGHBORHOOD STANDARDS

May 1946

1. N. L. ENGELHARDT, noted American school authority, recommends the following numbers of pupils per school.

Grades	Ages	Min. No.	Average No.	Max. No.
Kindergarten	5	320		
1-6	6-11	400	600	800
7-9	12-14	600	800	1,200
10-12	15-17	900	1,500	2,000

2. 1944-45 Public School Population

City of Winnipeg [illegible] 29,700 or 12.95% of city population.
Kindergarten to Grade 6 inclusive (Elem.) 17,000 or 7.41% of city population.
Grades 7-9 inclusive, (Junior High) 8,000 or 3.49% of city population.
Grades 10-12 inclusive, (Senior High) 4,700 or 2.05% of city population.

3. ELEMENTARY SCHOOL DISTRICT (NEIGHBORHOOD)

In Winnipeg area, a twelve room school of 35 pupils per room is considered ideal for an Elementary School.
12 x 35 = 420 pupils per school

(a) Area

Total population in an Elementary school area - $\frac{420}{.074}$ = 5,675 population

Number of families in an Elementary school area = $\frac{5,675}{4}$ = 1,419 families

Assuming a typical lot size at 30 x 100 = 3,000 sq.ft.
1,419 families, each on a lot, would require 1,419 x 3,000 = 4,257,000 sq.ft.
4,257,000 sq.ft. = 70% of whole area, since 30% is occupied by streets and open space.
100% area for Elementary School District = 6,081,429 sq.ft.

One half mile square contains 6,969,600 sq.ft., so area served by 400-420 pupil Elementary School can be assumed to be one-half mile square.

(b) Elementary School Site and Playground

Site for school building, including landscaping - 1½ acres
Playground for 420 pupils @ 200 sq. ft. per pupil = 84,000 sq. ft. or approximately 2 acres
Since a 420 pupil school is a comparatively small school, it suggests that the playground may also be small, but for an adequate neighborhood playground the recommended minimun is - 3 acres

Total for school and playground - 4½ acres

(c) Quiet Neighborhood Park

Recommended standard is 20 sq. ft. per person, i.e. 5,675 x 20 = 113,500 sq.ft. or approx. 2½ acres.
Recommended minimum - 2 acres

TOTAL School, Play and Park Space in Neighborhood - 6½ acres

4. JUNIOR HIGH SCHOOL DISTRICT (SUB-COMMUNITY)

Junior High school to serve area of 4 Elementary schools. Therefore sub-community =4neighborhoods, and includes an area of approximately one square mile.
Population = 4 x 5,675 = 22,700
Pupils per school = 22,700 x .0349 = 792 pupils, or approximately 800 pupils per Junior High School.

5. SENIOR HIGH SCHOOL DISTRICT (COMMUNITY)

Senior High School to serve area of 2 Junior High (Sub-communities) or 8 Elementary districts (Neighborhoods).
Therefore Community includes an area of approximately 2 square miles.
Population = 5,675 x 8 = 45,400
Pupils per school = 45,400 x .0205 = 930 pupils, or approximately 950 - 1,000 pupils per Senior High.

6. PLAYFIELDS FOR JUNIOR AND SENIOR HIGH SCHOOL SERVICE AREAS (ONE COMMUNITY)

One acre per 1,000 population is recommended. Senior High School Service Area or Community, serving approximately 48,000 population, would require 48 acres, to be distributed as follows:

#1 Junior High School	12 acres
#2 Junior High School	12 acres
Senior High School	24 acres
Total Playfields	48 acres

7. PLAYGROUNDS, PARKS AND PLAYFIELDS FOR A SENIOR HIGH SCHOOL SERVICE AREA OR COMMUNITY

Playground and sites for 8 elementary schools, plus quiet parks, 6½ x 8 =	52 acres
Junior and Senior High Playfields -	48 acres
Total for two square mile area -	100 acres

REVISED FIGURES

DEVELOPMENT PLAN

DEVELOPMENT PLAN.

Several maps have been prepared which show the existing conditions in the Town of Kenora and which show the studies culminating in the final proposed Development Plan.

Maps of the existing conditions in Kenora may be found at the end of the section "Base Material for Planning". These maps to illustrate the survey material and numbers 1 to 5 inclusive.

Maps numbers 6 to 11 inclusive, to be found in this section of the report, are studies of the town circulation and are self explanatory.

Map number 12 is a study of the communications within the town limits. Points to note here are :

1. All air traffic is moved south of Coney Island to eliminate traffic in Kenora Bay and to eliminate the noise detrimental to the hospitals on Tunnel Island.
2. The movement of log booms has been banned from Kenora Bay to relieve traffic and to allow beautification of the Bay.
3. The bus station is moved next to the Commercial loop road.
4. All air traffic is now centred from one airbase which is accessible by road. This shifting also relieves the commercial centre of the town.
5. The Ferry dock has been moved to the northern bank of the outlet of Laurenson's Creek to allow parking facilities near the dock for tourists, etc.

Map number 13 is a study of the public utilities. The main points covered in this map are:

1. A system of sewer interceptors and a sewage disposal plant are proposed.
2. The water service main to Tunnel Island has been rerouted to serve Coney Island and Birch Island also. This change eliminates the necessity of an underwater water main across Kenora Bay.
3. A system of ring water mains is proposed to service the town to alleviate the conditions set up under the present system, which is served by one main only.

Map number 14 is a study for the proposed Development Plan, which is map number 15. The points illustrated on map 14 will be clarified in the discussion of map 15 which is best described as follows:

The area for the Town of Kenora lies directly east of Keewatin and somewhat south of Redditt and lies on the northern shore where the Lake of the Woods outlets into the Winnipeg River. The

municipal limits include 4,400 acres of land and 1,800 of water. The main water movement passes north and south through the centre of the area. The railway paralleled by the Trans-Canada Highway runs east and west through the physical centre of the town at approximately the northern third point of the area.
The railway and bus stations are most conveniently placed near the eastern third point and the Town Centre would develop not far from them.

Industry is divided into two areas east and west each with access to a highway and to the railroad. The west location has access to water much more conveniently than the Eastern Industrial site and for this reason would be most suitable for boatworks,etc. The Eastern Industrial site is more suitable for small industrial factories.

Agricultural land on the east has been preserved and linked up to the town much more conveniently by a system of roads.

Park lands have been set aside to flow between the main parts of the town. At a future date there is to be a ribbon green belt just south of the Trans-Canada Highway below the railway yards to give seclusion to the Central Park Neighborhood.

The housing groups are on high ground, clear of the main traffic connections with natural features, such as, woods, creeks and valleys as barriers between them. They are grouped about the centre area of the town as far as is possible and existing housing is used as far as is practicable.

The Main Town Area extends from the railway station south to the outlet of Laurenson's Creek with room for expansion. A loop through this area runs off from the Trans-Canada Highway for the convenience of shoppers.

The Trans-Canada Highway will carry most of the heavy traffic clear of the Town of Kenora around Laurenson's Lake. A second route will take some of the traffic through the Main Town Area for those who have business interests. The Reddit Highway runs north from the Main Town Centre passing over the Trans-Canada H ighway and the C.P.R. Railway. Roads are threaded between housing, industrial and other main areas to complete an internal road pattern within the town, which links up with the regional highways.

Existing school facilities in the town have been utilized as far as is practicable. The school in Central Park Neighborhood has been relocated to eliminate the danger from the Trans-Canada H ighway and the railroad yards. A new school has been proposed to meet the needs of new development at the north-east corner of the town limits.

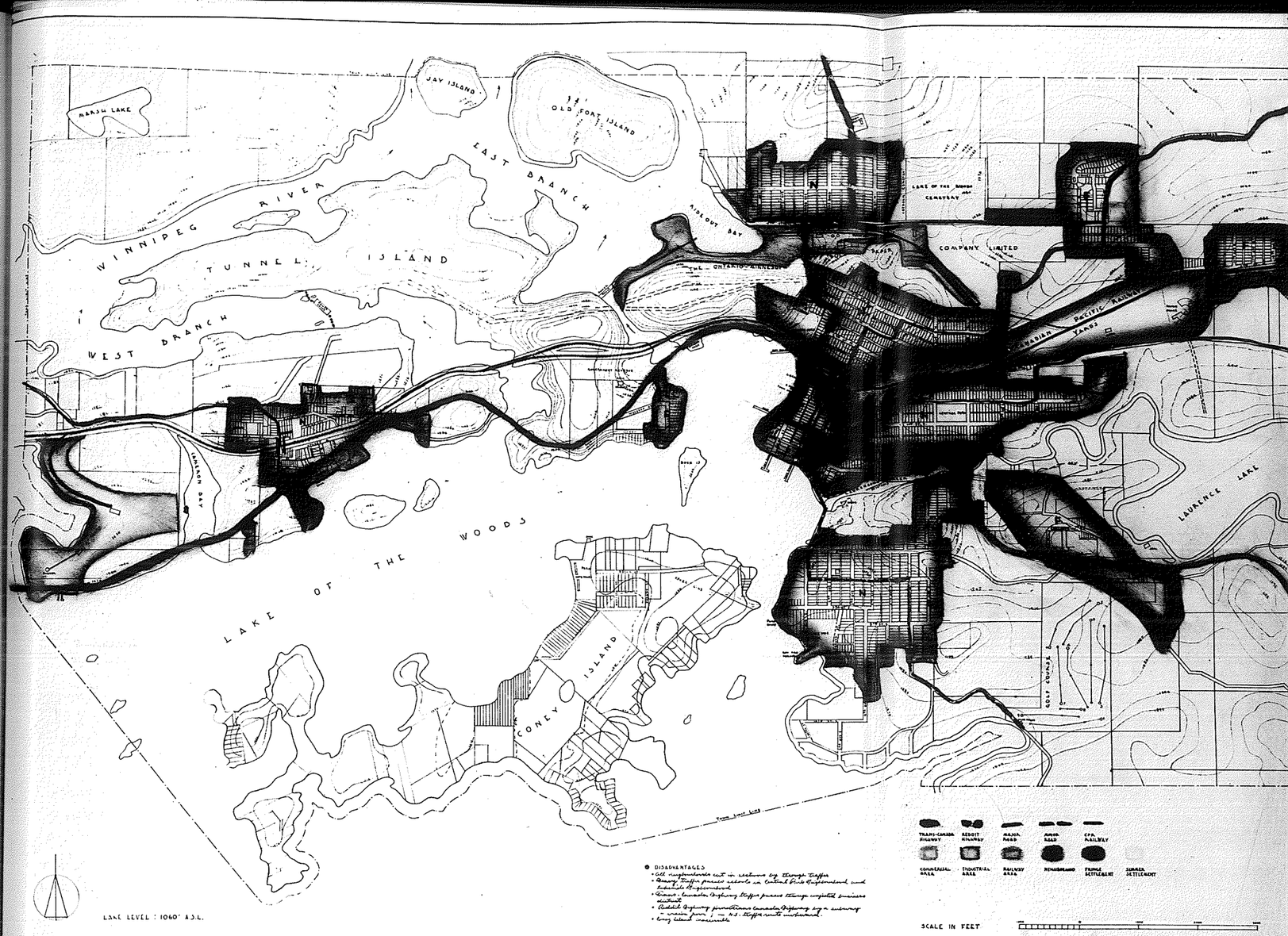
Parks and playfields are provided for each Residential Area with a main Sports Area as an element of the Town Centre as close as is practicable. There are some beautiful churches in the Area and they have all been kept. Doubtless, however, others will have to be built.

Areas have been set aside to attract tourists. These areas provide picnicing, tenting and trail camping facilities, etc. Coney Island is opened up as a summer residential and public recreational area.

All Commercial Navigation and Air Landing strips are routed so as to provide the least inconvenience to the development around Kenora Bay. Regional buses enter the Main Town Centre via the Reddit Highway or via the loop from the Trans-Canada H ighway to stop at the bus station in the heart of the Area.

Water is pumped from a surface supply to the storage tank in North Ward Neighborhood which feeds the town area through a system of ring mains. Sewage is collected and treated in a disposal plant at Rideout Bay on the Winnipeg River.

The speed of constructing the proposed Development Plan for the Town of Kenora is dependent on such national problems as the labor force made available in light of the world crisis. Therefore, no calculations of actual time or labor have been hazarded.



LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

CIRCULATION STUDY : EXISTING

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

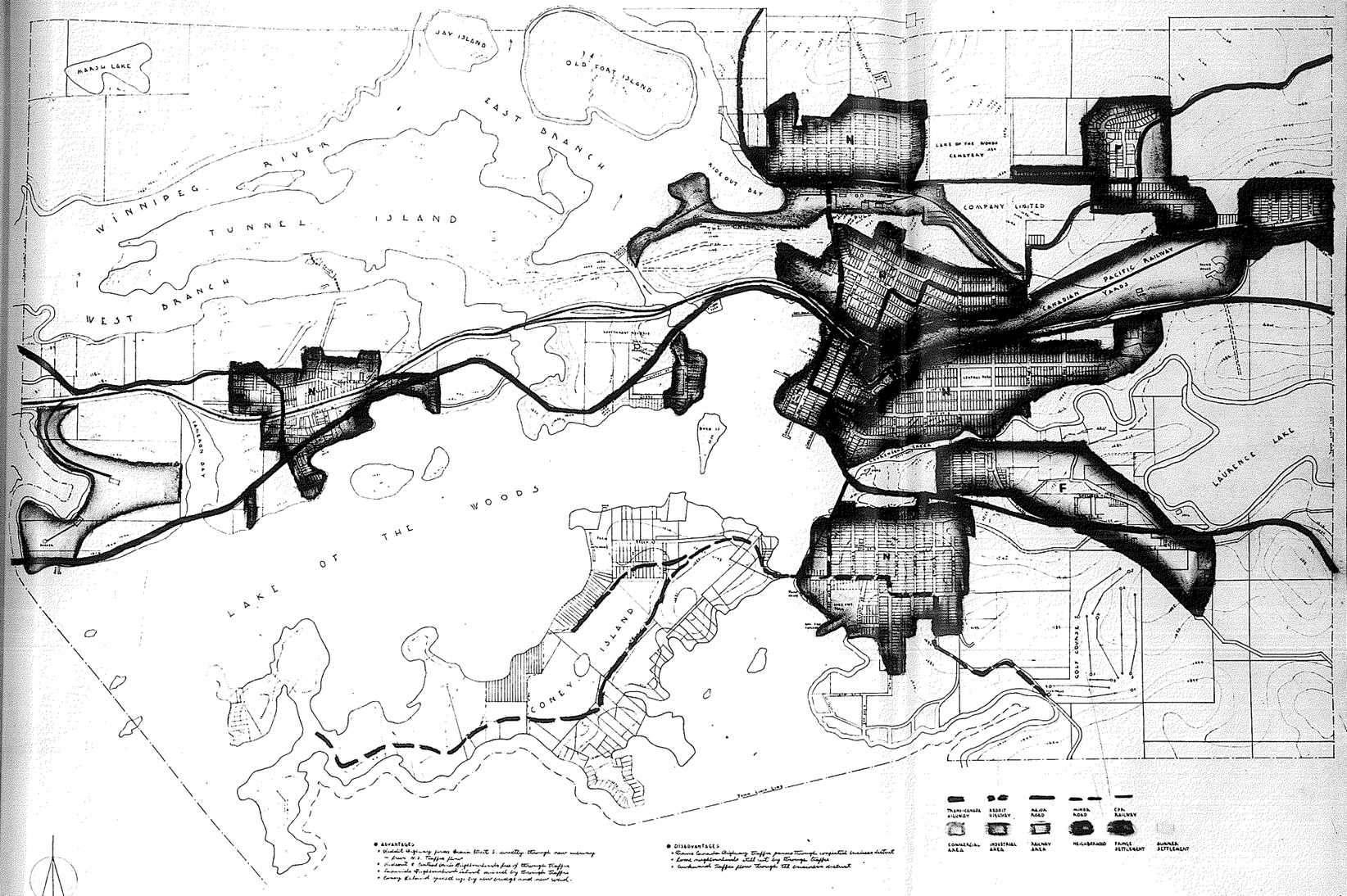
F H DECKS B. ARCH

6

LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

CIRCULATION STUDY : PROPOSED



LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

CIRCULATION STUDY : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

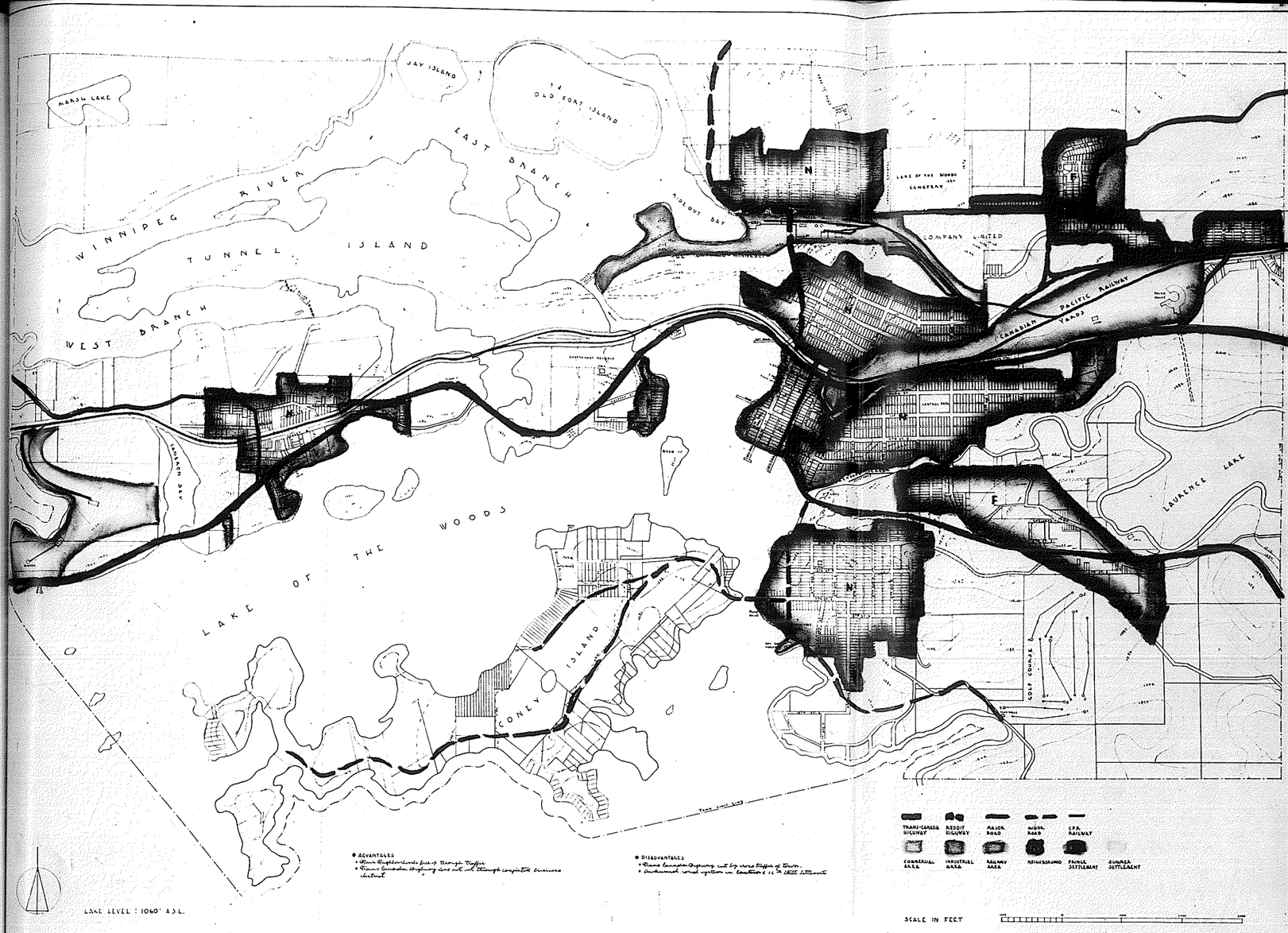
F. H. DEEKS B. ARCH

7

LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

CIRCULATION STUDY : PROPOSED



TOWN OF KENORA

CIRCULATION STUDY : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

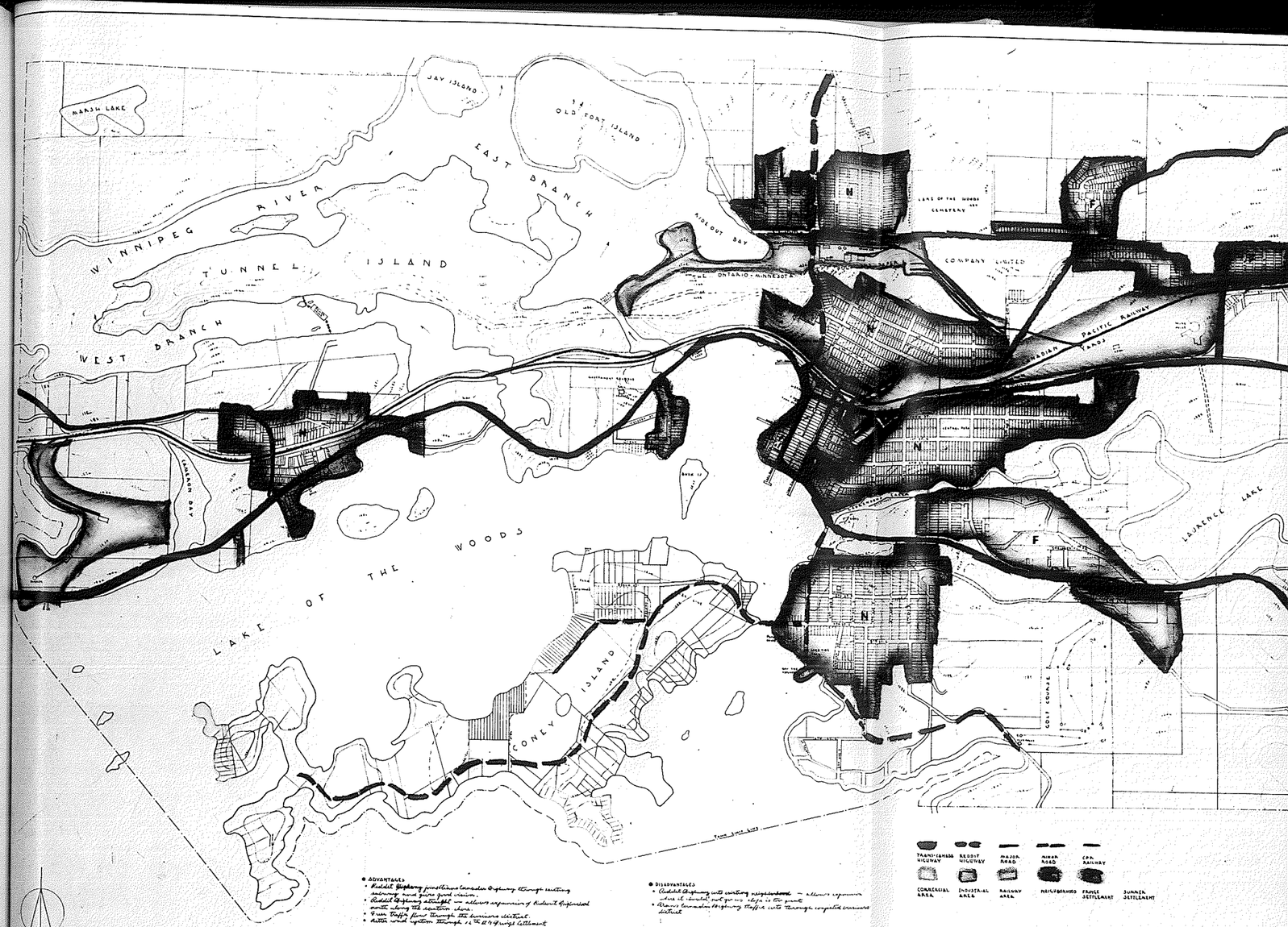
F H DEEKS B. ARCH

8

LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

CIRCULATION STUDY : PROPOSED



TOWN OF KENORA

CIRCULATION STUDY : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

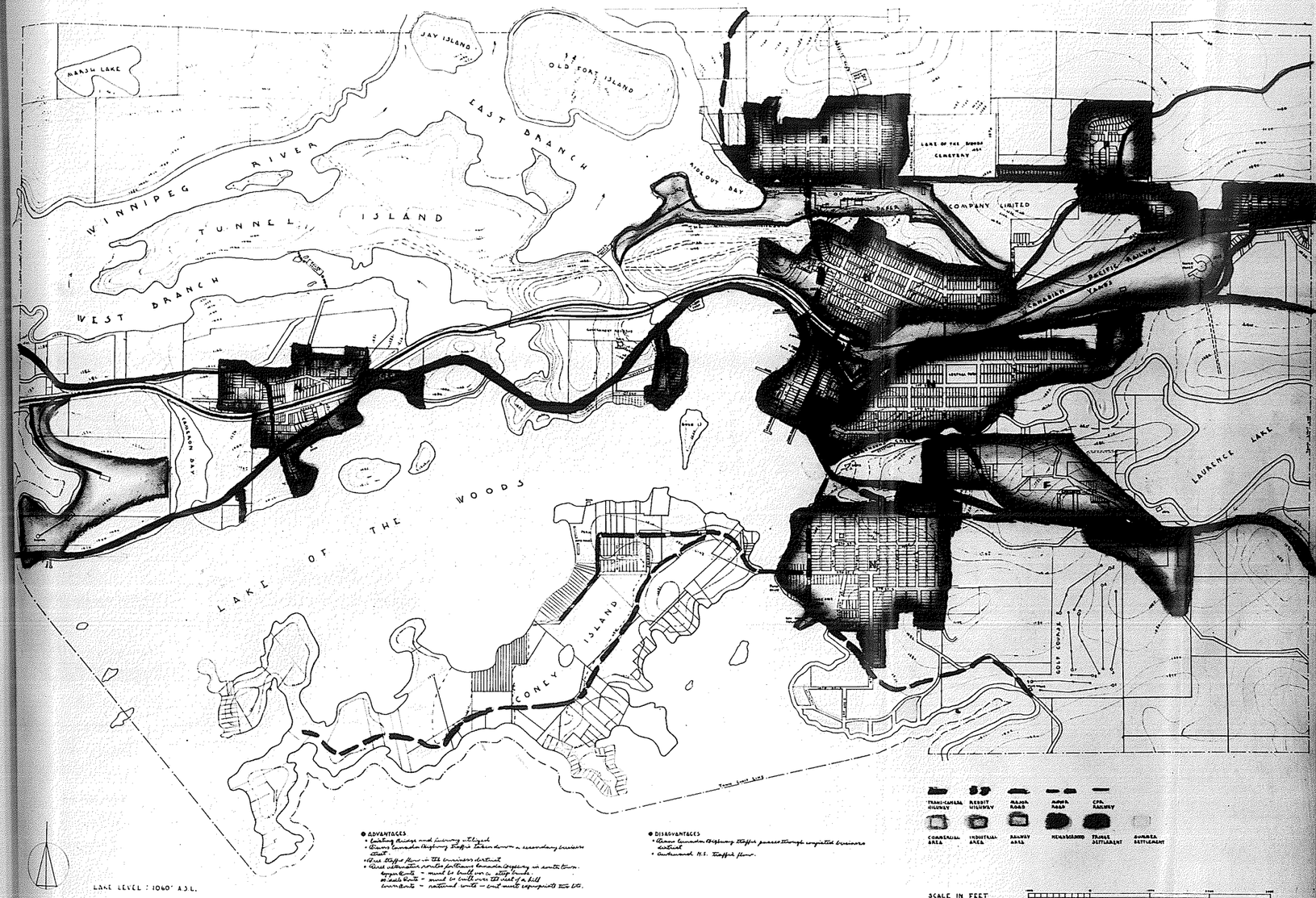
F H DEEKS B. ARCH

9

LAKE LEVEL : 1060' A.S.L.

TOWN OF KENORA

CIRCULATION STUDY : PROPOSED



TOWN OF KENORA

CIRCULATION STUDY : PROPOSED

LAKE LEVEL : 1060' A.D.L.

TOWN OF KENORA

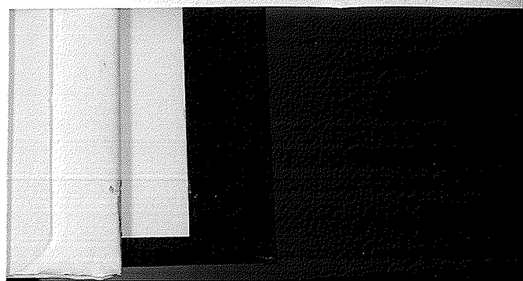
CIRCULATION STUDY : PROPOSED

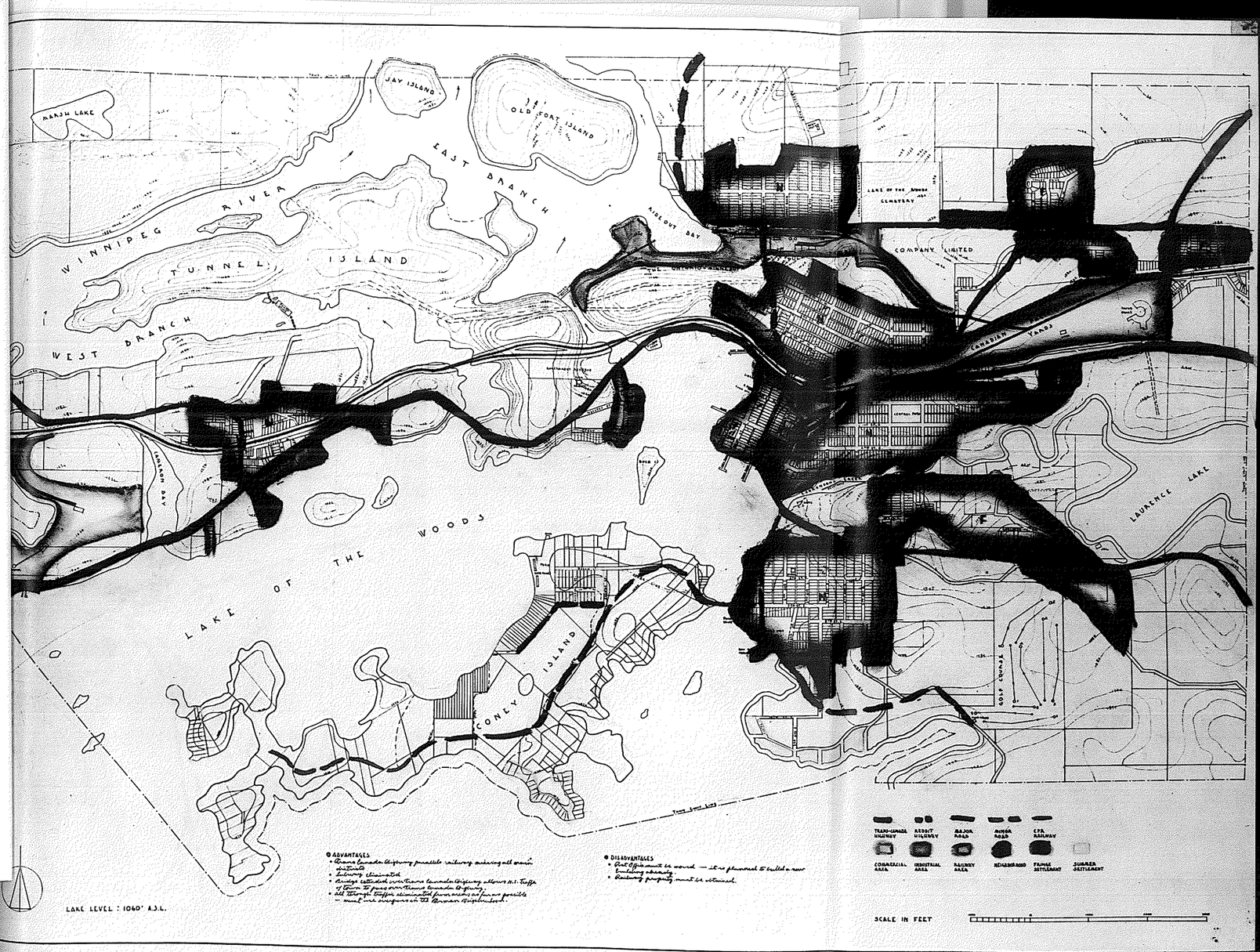
PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. H. BECKS B. ARCH

10





LAKE LEVEL : 1060' A.S.L.

ADVANTAGES
- Trans Canada Highway possible without entering all main centres
- Railway eliminated
- Airstrip established with future extension to Highway 17 from Winnipeg via Sioux Lookout to Ignace
- All through traffic eliminated from entering as far as possible — must use diversion on "D" Avenue & Highway.

DISADVANTAGES
- Post Office must be moved — it was planned & built a new building recently.
- Railway property must be returned.

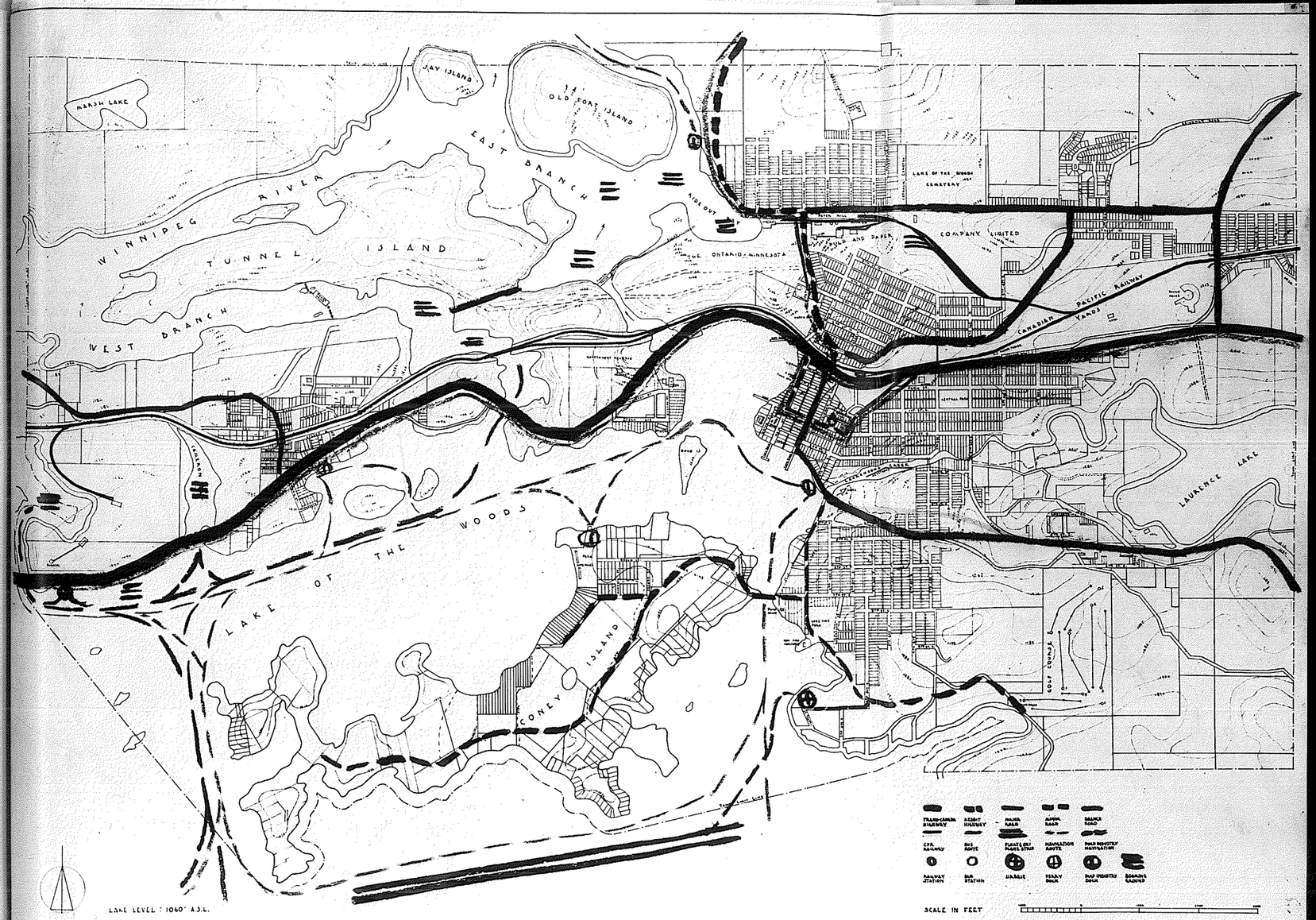
TOWN OF KENORA

CIRCULATION STUDY : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. H. DEEKS B. ARCH.



TOWN OF KENORA

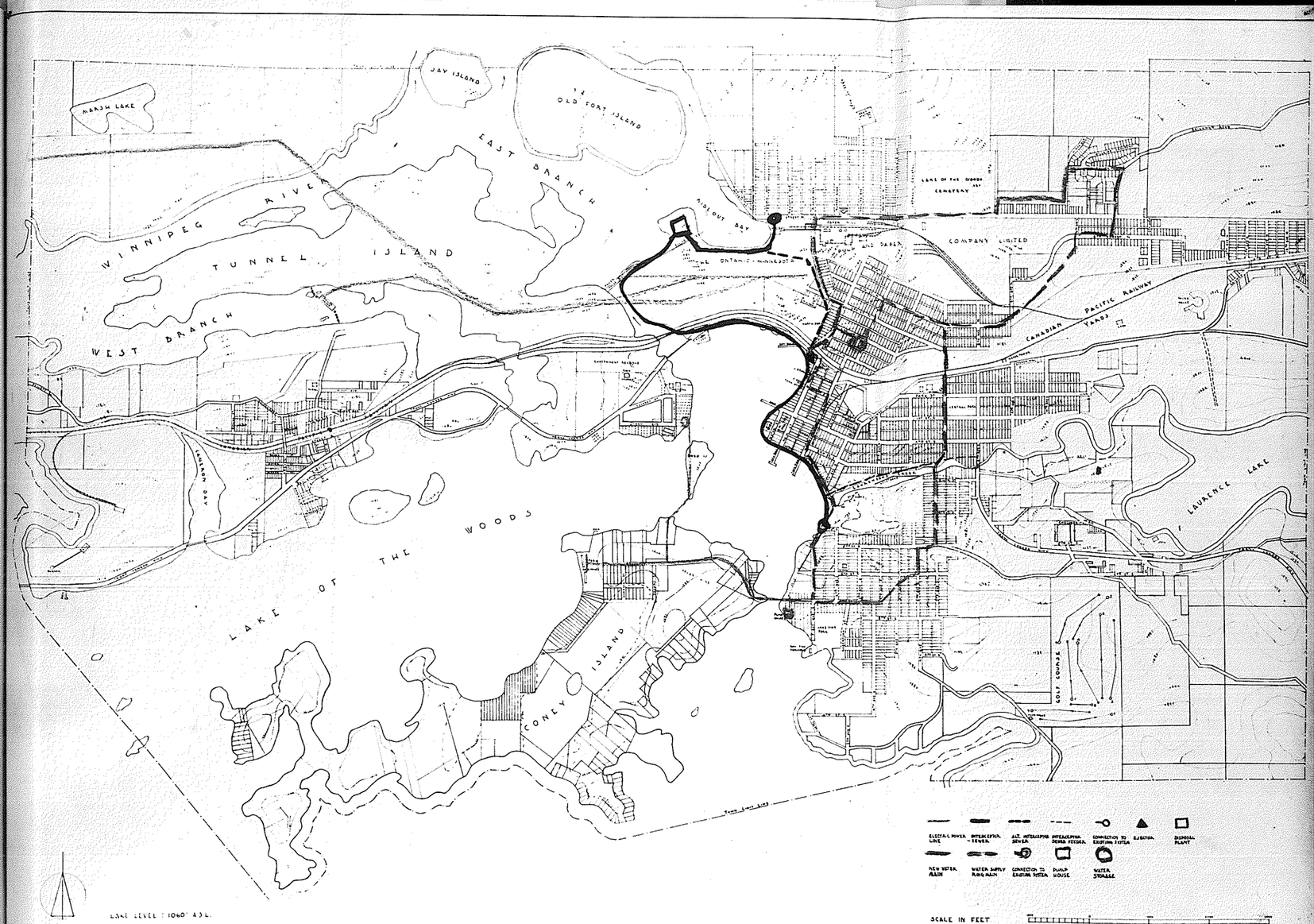
COMMUNICATION STUDY : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. H. DEEKS B. ARCH

12



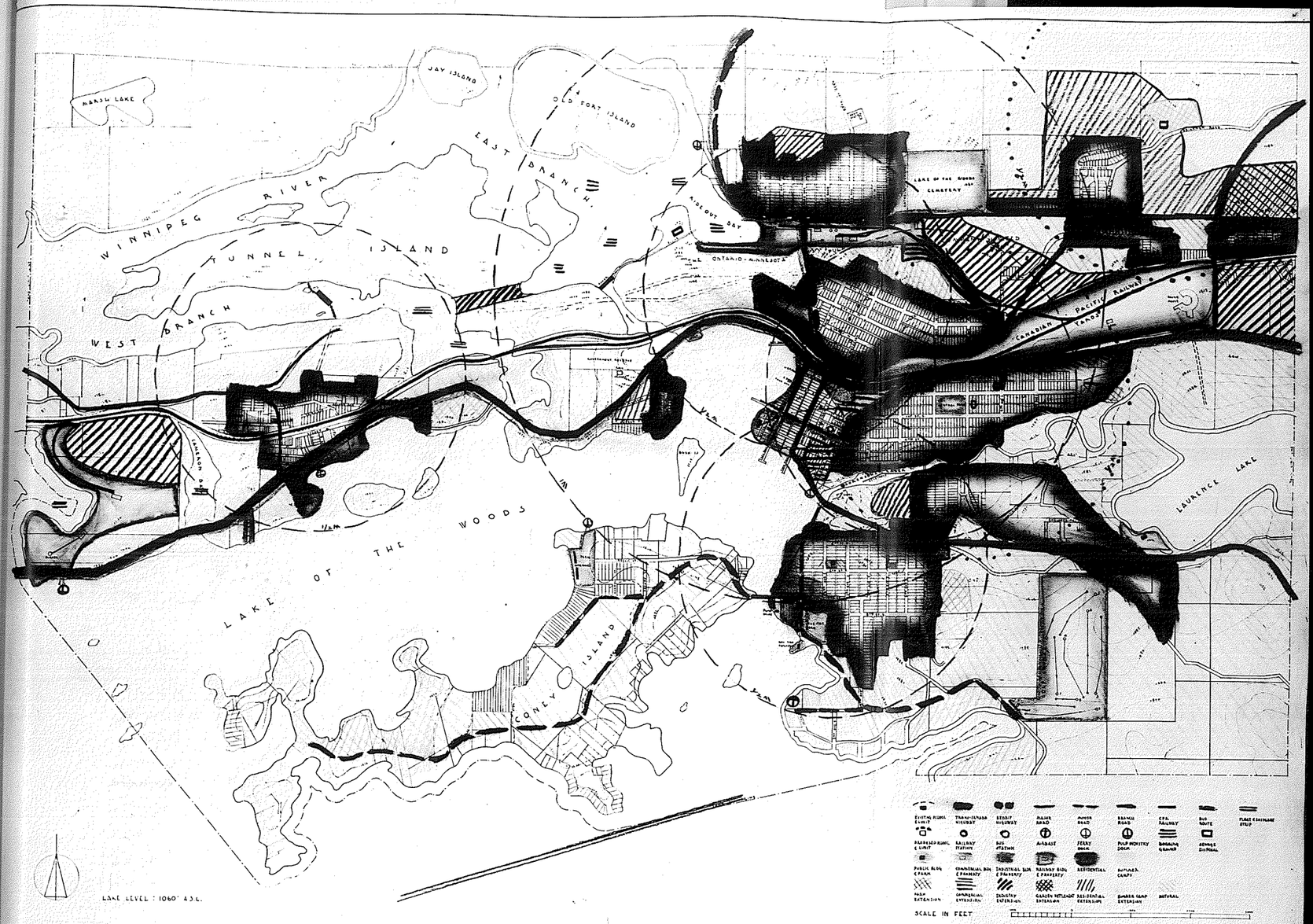
TOWN OF KENORA

PUBLIC UTILITIES STUDY : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. W. DEEKS B. ARCH



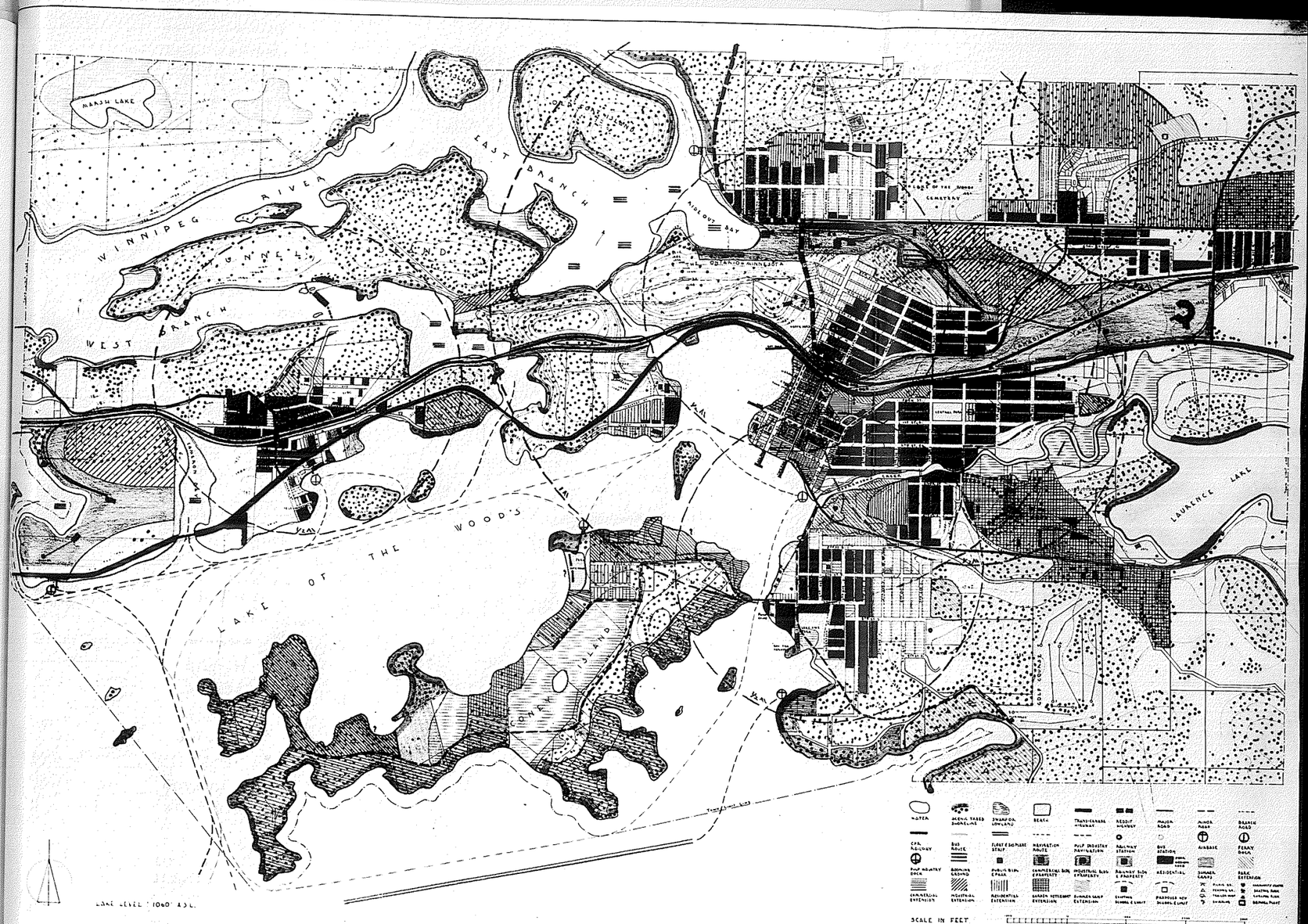
TOWN OF KENORA

LAND USE STUDY : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. H. DEEKS B. ARCH



TOWN OF KENORA

DEVELOPMENT PLAN : PROPOSED

PLANNING THESIS
MASTER OF ARCHITECTURE (C.P.)

UNIVERSITY OF MANITOBA
1951

F. H. DEEKS B. ARCH

LAKE OF THE WOODS

CEMETERY

COMPANY LIMITED

MINTO AVE

HILLSIDE CRESCENT

VALLEY DRIVE

BRINKMAN ROAD

11TH AVE N.

12TH AVE N.

13TH AVE N.

14TH AVE N.

15TH AVE N.

16TH AVE N.

17TH AVE N.

18TH AVE N.

6TH STREET N.

6TH ST. N.

6TH ST. N.

9TH AVE N.

7TH AVE

8TH AVE

CANADIAN PACIFIC RAILWAY YARDS

ROUND HOUSE

COAL

WATER TOWER

FLOUR MILL

SCHOOL

CENTRAL PARK

9TH AVE S.

10TH AVE S.

7TH AVE S.

8TH AVE S.

RIVER ST.

4TH ST. S.

5TH ST. S.

6TH ST. S.

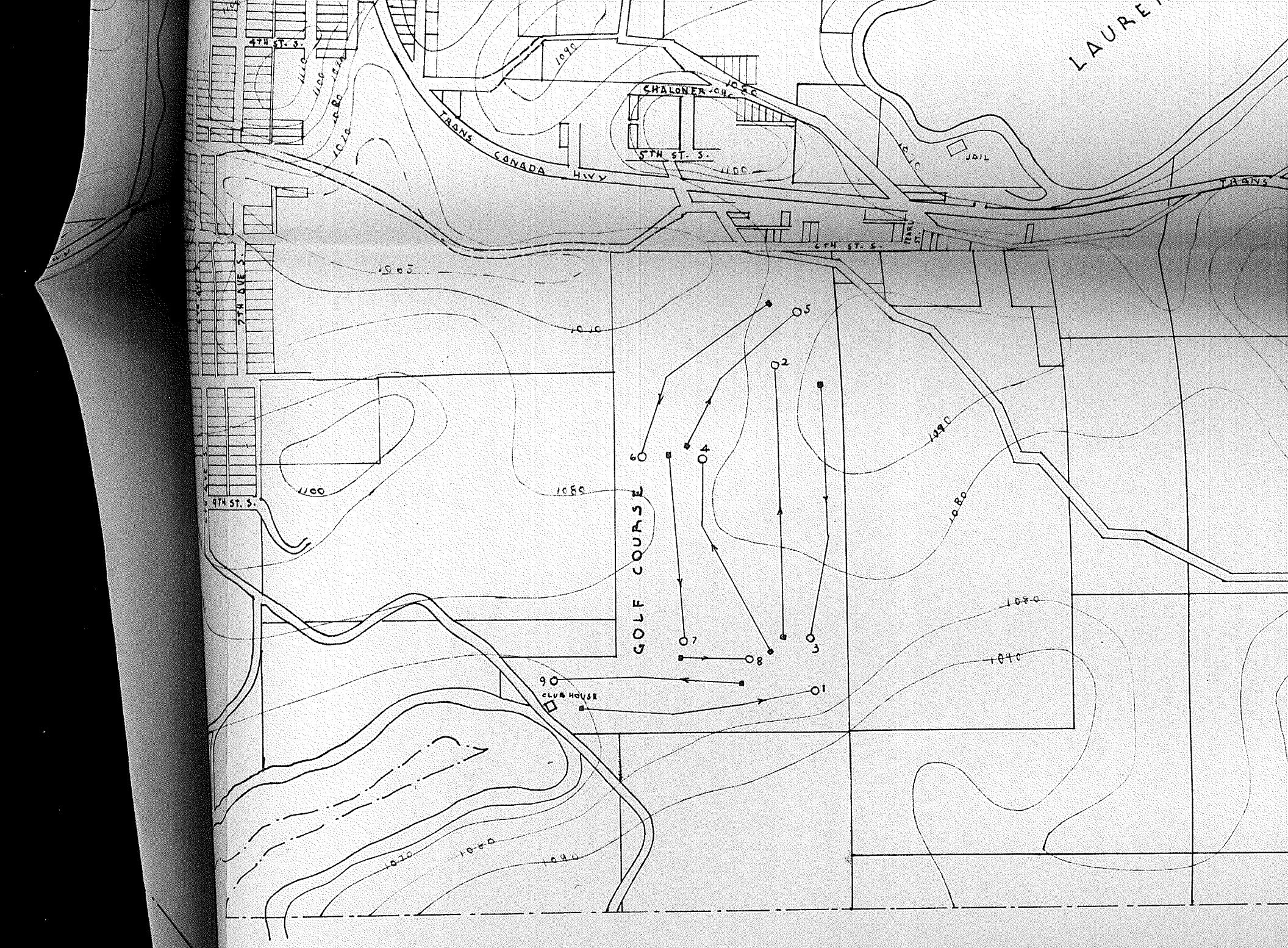
TRANS CANADA HWY

CHALONER

JAIL

RAILWAY

LAURENCE LAKE



SCALE IN FEET

1000 0 1000 2000

...NNING THESIS
...ER OF ARCHITECTURE (C.P.)

... OF MANITOBA

...RCH

OLD FORT ISLAND

RANCH

RIDE OUT BAY

THE ONTARIO - MINNESOTA PULP AND PAPER

ABBOTT ROAD

DOCK

DORSET ST.

SUSANNA AVE

REGINA AVE

MASCOTTE AVE

MIKADO AVE

RUPERT ROAD

KELLICK AVE

MAIN ST. N.

9TH STREET N.

PAPER MILL

OFF

SLUICE

POWER HOUSE

PUPERT ROAD

SCHOOL

3RD ST. N.

4TH ST. N.

NORTH PARK

ALEXIO PARK

GOV DOCK

1ST ST N

WATSON ST

4TH AVE

GOVERNMENT RESERVE

ROCK CRUSHER

HOSPITAL

WOLSELEY ST.

SYLVAN ST

OCEAN AVE

TRANS CANADA HWY

BUSH I.

BOAT HOUSE

MC KELLAR

F. DOCK

TOWN OFF.

1ST ST. S.

DOCK

WATER ST

COURT HOUSE

MARKET PARK

MAIN ST.

WATSON ST.

CHIPMAN ST.

RAILWAY ST

WAR MEMORIAL HALL

FIRE HALL

2ND ST. S.

3RD ST. S.

4TH AVE S.

5TH AVES

6TH AVE S.

LAURENSONS CREEK

REVETMENT

RUINS

LOW

5TH ST. S.

6TH ST. S.

7TH ST. S.

8TH ST. S.

2ND AVE S.

3RD AVE S.

4TH AVE S.

5TH AVE S.

6TH AVE S.

PUMP HOUSE

LAKE SIDE PARK

ROBERTSON ST.

Gov FISH

PARK

BATH HOUSES

BEACH ST.

MURDOCK ST.

DREWRY ST.

RIVER LINE

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

LAURENSONS CREEK
RECLAMATION
RUINS
LAKE SIDE PARK
PUMP HOUSE
GOV FISH HATCHERY
PROBERTSON
CHAPEL ST
TOWN LIMIT LINE
BUSH I
BEACH ST.
PARK
BATH HOUSES
DOCK
SEWER LINE
PROMENADE
MAIN
WATER
HWY
TRANS CANADA
1ST AVE S.
2ND AVE S.
3RD AVE S.
4TH AVE S.
5TH AVE S.
6TH AVE S.
7TH AVE S.
1ST ST. S.
2ND ST. S.
3RD ST. S.
4TH ST. S.
5TH ST. S.
6TH ST. S.
7TH ST. S.
8TH ST. S.
10TH ST. S.
FIRST AVE S.
3RD AVE S.
4TH AVE S.
5TH AVE S.
6TH AVE S.
7TH AVE S.
8TH AVE S.
37TH AVE S.
MURDOCK ST.
DREWRY ST.
TOWN DOCK
GOV DOCK

TOWN LIMIT LINE

JAY ISLAND

EAST B

RIVER

PEG

TUNNEL ISLAND

BRANCH

POWER LINE

POWER HOUSE

School

FIRST AVE

SECOND AVE

THIRD AVE

ROAD

DEACON ST.

KAY ST

STREET A

PACIFIC

CANADIAN

TRANS CANADA HWY

DAVIS ST.

PARSON ST.

JASPER ST.

BAY ST.

DOCK

ONTARIO ST.

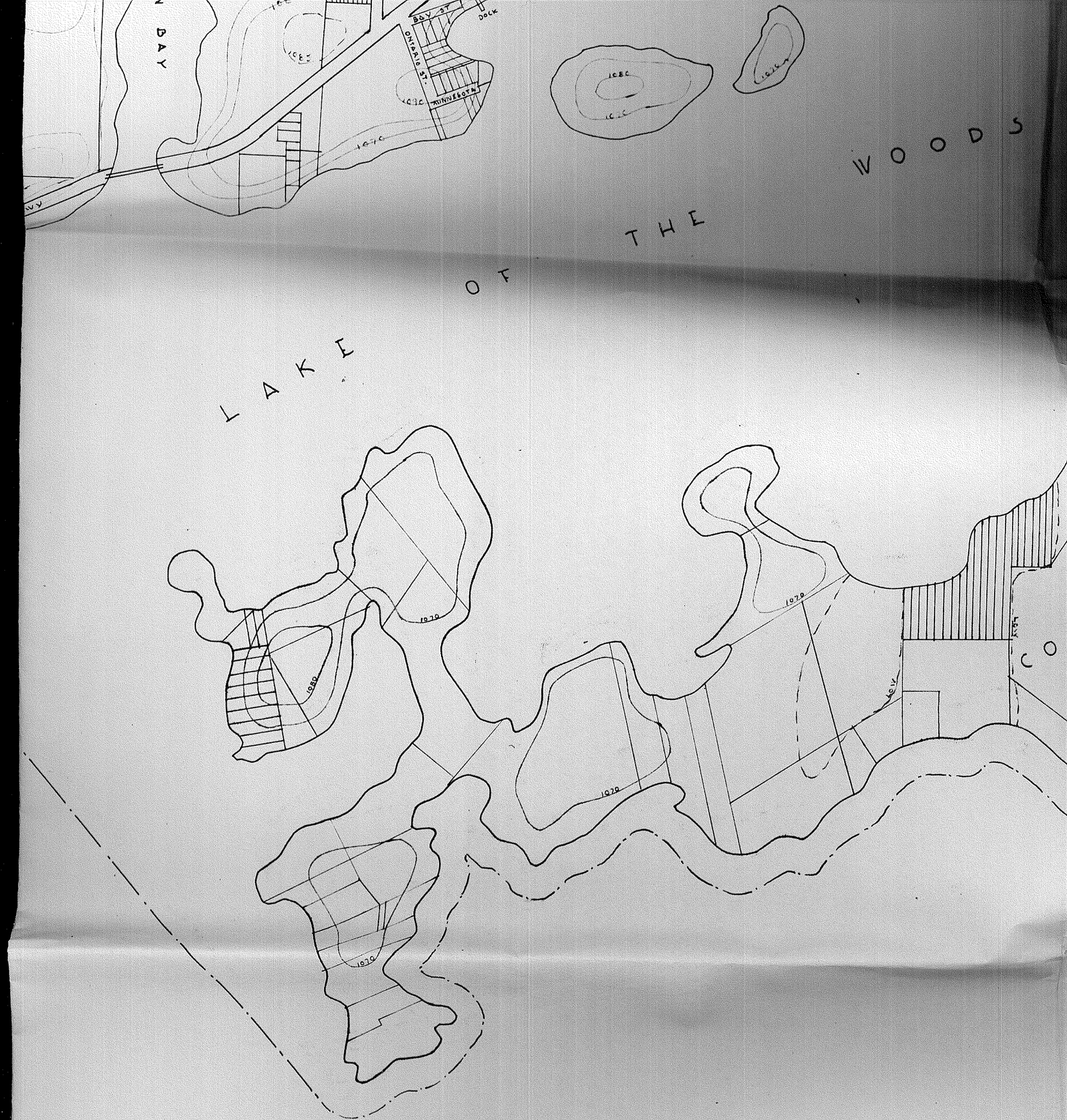
MINNESOTA

CAMERON BAY

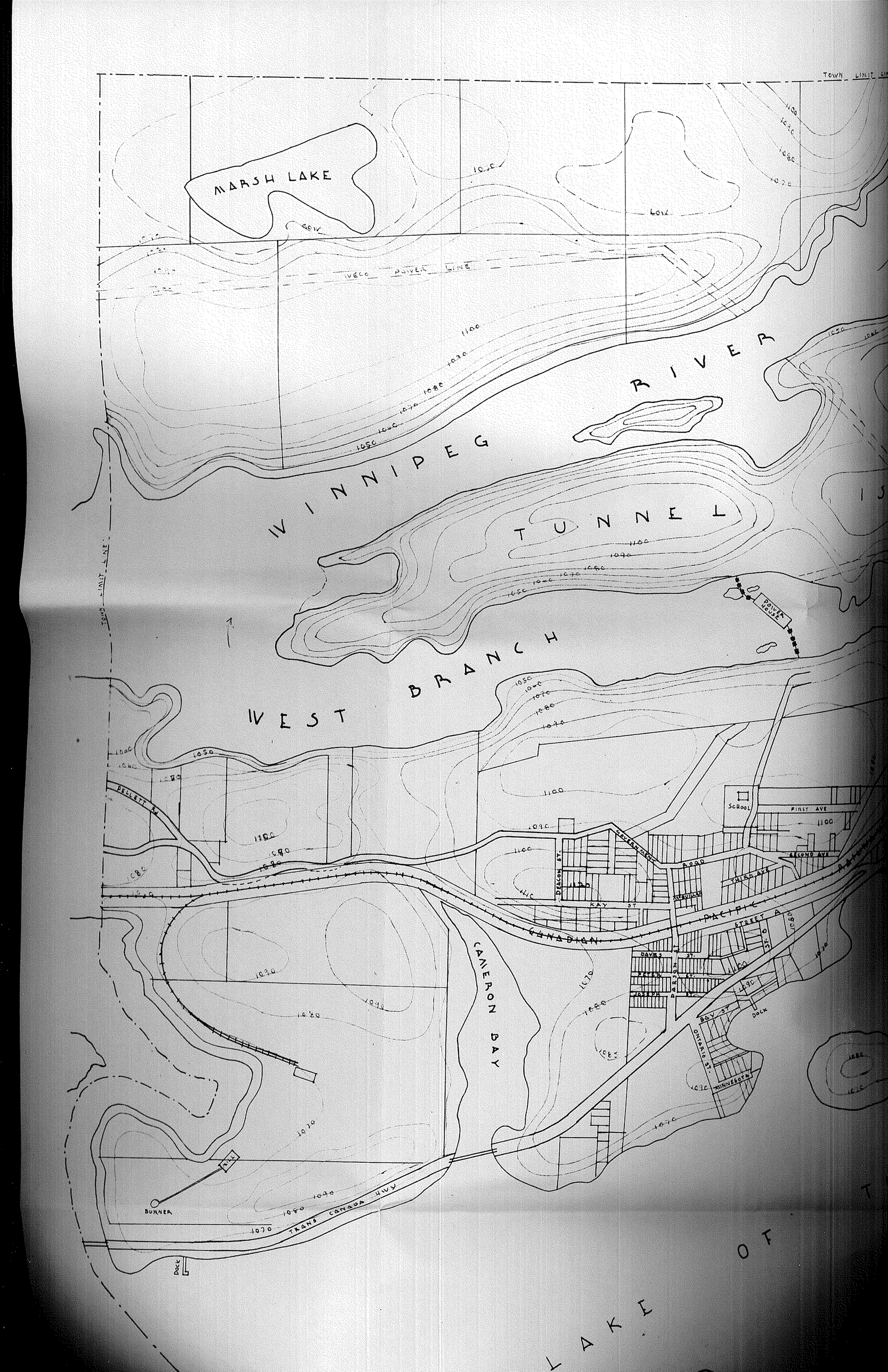
THE WOODS

OF

LAKE


BAY
BAY ST.
DOCK
ONTARIO ST.
MINNESOTA
WOODS
THE
OF
LAKE
1070
1080
1060
L : 1060' A.S.L.

OF KENORA


TOWN LIMIT LINE
MARSH LAKE
IVECO POWER LINE
WINNIPEG RIVER
TUNNEL
POWER HOUSE
WEST BRANCH
TOWN LIMIT LINE
PELLETT AV
SCHOOL
FIRST AVE
SECOND AVE
THIRD AVE
DEACON ST.
KAY ST.
DAVIS ST.
FRASER ST.
JOSEPH ST.
PARKER ST.
BAY ST.
ONTARIO ST.
MINNEHOMA
DOCK
CANADIAN PACIFIC
STREET A
CAMERON BAY
BURNER
TRANS CANADA HWY
DOCK
LAKE

TOWN OF KENORA

LAKE LEVEL : 1060' A.S.L.

TO LAKE

REFERENCES: Technical and General

AN OUTLINE FOR MAKING SURVEYS (pamphlet IOI)
U.S. Department of Commerce

BASIC SURVEYS FOR PLANNING
Jaqueline Tyrwhitt and W. L. Waide

OUTLINE FOR A MASTER COMMUNITY SURVEY

GRAPHIC PRESENTATION
Brinton

THE STRUCTURE OF METROPOLITAN COMMUNITIES
D. J. Boque

TOWN AND COUNTRY PLANNING TEXTBOOK
APRR

HARLOW NEW TOWN
Frederick Gibberd

CANADA YEAR BOOKS

ENCYCLOPEDIA OF CANADA

RAINY RIVER COUNTRY
Nute

COMMUNITY PLANNING IN CANADA
Community Planning Association of Canada I948

PLANNING SUGGESTIONS FOR CANADIAN COMMUNITIES
Canadian Chamber of Commerce

THE HOME OF MAN
Le Corbusier

Culture of Cities
Lewis Mumford

New City Patterns
Sanders and Rabuck

THE CITY
Eliel Saarinen

THE NEW CITY
L. Hilberseimer

PLANNING THE MODERN CITY
Lewis