

secured at any other plant. He was reluctant to leave the title to the dam in the possession of any government and did not believe that it could be built expeditiously by the governments. He wanted the dam for war purposes during the war and to prevent interference by ice with ordinary production after the war.

Evidence was produced on Friday to show that the South Sault Channel is navigable.

Mr. Guthrie then appealed to Judge Koonce to get in touch with Washington and have a direct agreement made between the United States and Canadian governments that the weir would be removed after the war, but Judge Koonce did not assent.

Jas. W. Rickey, the company's hydraulic engineer, said that the weir must be in by December 20th and as it would take three months to complete the work, the commission's permission must be secured by September 15th.

The commission met in private session on Saturday to discuss the evidence submitted and will no doubt announce their decision before the end of next week. If the application is granted, the Dominion Government will at once request the United States government to guarantee that the weir will be removed upon request of the Dominion Government at any time after the war. Formal protest will also be made against the present diversion of water through the company's power canal and against any possible future increased diversion.

PLANNING A SYSTEM OF RURAL HIGHWAYS*

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IN all districts which have achieved a system of good roads it is recognized that one of the first essentials is the adoption of a well-considered, carefully worked-out system of roads, classifying the roads according to traffic and placing the system so adopted on a definite, permanent basis by preparing a plan showing the system of roads adopted.

Three Main Divisions

Rural roads are usually classified according to traffic, under three main divisions, as follows:

1. "Main Trunk Highways" or "Provincial Roads," being those which carry a large proportion of through traffic between important cities, towns and other terminal points.

2. "Leading Market Roads," which are those radiating from local market or shipping points and carrying a considerable accumulation of traffic.

3. "Local" or "Neighborhood Roads," being those which carry the traffic, or but little more than the traffic which is created by the farms actually adjoining the road.

An adequate system of provincial and leading market roads will usually comprise about 20 per cent. of the total road mileage in a municipality and will take care of from 80 to 85 per cent. of the total traffic in the municipality. It is evident, therefore, that construction should, so far as possible, be concentrated upon the system of main roads and consequently the system of main roads should be defined at the very inception of a scheme of road de-

velopment. This necessity is further emphasized when it is remembered that upon the traffic which a road has to carry, that is upon its class, should depend the standard to which it is constructed.

Most municipalities have in a general way determined upon what they consider will be their main roads, but very few of these systems have been actually defined in a definite manner and the various roads considered as main roads by the council one year, are frequently changed by succeeding councils and, further, very few of the systems are based upon a thorough study and analysis of the existing and prospective conditions. This condition must eventually result in a great deal of waste and lack of efficiency in the service given by the roads and it is submitted that the placing of the policy of our municipalities upon a proper basis in this connection is one of the most important steps that the provincial highway officials can take. (And for that reason the Town Planning and Rural Development Act recently passed by the legislature deserves to be welcomed by the rural municipalities and also by highway engineers.)

Main Roads System

The following method of analysis and working out a system of main roads for a rural municipality is doubtless open to much improvement, which will suggest itself as this class of work develops in this province. However, it is outlined in the hope that it may be of use to other members of the profession when they are called upon to deal with work of this nature.

The first step in the planning of a system of provincial highways and leading market roads is the preparation of a plan of the district to be dealt with, showing all railroads, towns, villages, loading platforms at railway sidings, main trunk highways, schools and public gathering places. The Provincial Highways Department should be communicated with for information as to the provincial highways in the district and also as to any information they may possess as to proposed railway lines, etc., in the district. An analysis is then made of the whole district, with the purpose of determining which market towns give the shortest haul for each quarter section and based upon this analysis the whole district is divided into sub-districts, each of which is naturally tributary (from the standpoint of distance alone) to a market town.

Basis for Comparison

An analysis is then made of various alternative locations for the leading market roads, so designed as to:

1. Bring each quarter section as near as possible to a leading market road when following the route of shortest haul.

2. Link up the various leading market roads so as to provide to the best advantage for traffic between sub-districts and between the various cities and towns, also keeping in mind that certain towns, owing to their superior shopping or market facilities will receive much traffic from districts other than those actually tributary to them from the standpoint of distance.

3. Best serve the community when considering the provincial highways, schools, public gathering places, etc.

The system so worked out serves as a basis for purposes of comparison when the changes necessitated by natural topographical conditions, existing settlement, prospective future settlement and development in adjacent or related urban and rural communities or districts are taken into consideration.

The second step is the assembling of information as to:

(a) The intensity of settlement and production in the

*Paper read before the Saskatchewan Land Surveyors' Association.