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DRAINAGE PROBLEMS IN SASKATCHEWAN

DIFFICULTIES ENCOUNTERED IN WESTERN DRAINAGE SYSTEMS—MODERN METHODS OF CONSTRUCTION—ENGINEERING FEATURES OF LAND DRAINAGE.

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THE importance of drainage in reference to farm lands, and its wide benefits in various forms are being widely recognized in Saskatchewan. The purpose of this article is briefly to set forth, with certain remedial suggestions, some of the causes militating against successful drainage work in the province; to outline a method of location and design of drains; to indicate various methods of construction; and, finally, to attempt to show the benefits accruing from drainage work, both to the farmer and to the province at large.

Difficulties Encountered.—The factors restricting drainage progress are mainly three, *viz.*:—

- (1) The limitations of the Drainage Act.
- (2) A negligent application of Section 20 of the Drainage Act.
- (3) The peculiar physical and climatic conditions of those areas most in need of drainage.

The Saskatchewan Drainage Act involves in effect the following procedure:—

In the case of any proposed drain, the owners of at least one-half the area of the land affected by the said drain must petition for the same to the Government. Upon receipt of this, the latter will send an engineer to report upon the feasibility of the scheme. If, upon investigation, the engineer reports that the benefit is not sufficient to warrant the construction, the cost of the investigation is charged to the petitioners.

If, however, the engineer reports the proposed construction to be an economic improvement, the Government prepares an assessment sheet advising each resident owner affected as to the amount of his land to be reclaimed and the estimated individual cost. (The farmers are allowed to meet the cost of this work by yearly payments extending over a period of 30 years).

The resident owners are given 30 days for consideration of the matter. If, within that time, the owners of at least one-half the area to be benefited enter protest against the proposed work, the Government takes no action further than to assess the incurred cost of the work to date against the original petitioners.

In the event, however, of the owners of the major part of the land affected being desirous of proceeding with the work, the Government deals with the matter according to the provisions of the Public Works Act, *i.e.*, the work is let by tender.

Since all unpatented homestead and school lands are owned by the Crown and not by the province, they are not affected by provincial laws and, consequently, are not affected by the Saskatchewan Drainage Act.

Areas most in need of drainage are naturally sparsely settled, a large proportion therefore belonging to the Crown. Hence, the few must not only, under the present Drainage Act, bear the cost of improving their own lands, but also large areas of Crown land.

In many districts where drains are badly needed, both for farm and highway improvement, the area of Crown land is so great as to absolutely prohibit construction.

This is a very real loss, not only to the province but to the Dominion, as the most fertile land lies within these wet and submerged areas, which, in their natural state, are not possible as homesteads. Undrained areas also seriously obstruct the construction of highways.

The Saskatchewan Government in the last three years, recognizing both the importance of drainage work and the disabilities under which it is carried on, has endeavored to come to some arrangement with the Dominion Government by which the evils of the present system might be mitigated. A meeting at Ottawa for this purpose was arranged for June 3, 1914, between representatives of the Alberta and Saskatchewan Governments respectively and the superintendent of irrigation for the Dominion. Several methods of bridging the difficulty were suggested. So far as the question of drainage for the improvement of farm lands was concerned the following plan met with the most favor:—

That the Provincial Government make the usual survey for any proposed drainage scheme, and in the event of Crown lands being affected send complete plans with all data to the Dominion Government for approval. If satisfactory, the Dominion Government would then pass an order-in-council authorizing itself to sell the affected lands to the Provincial Government at one dollar per acre.

The assessment is then made covering all lands benefited, the Provincial Government paying its share.

After completion of the drain, the Provincial Government may sell such lands by public auction under regulations approved by the Dominion Government.

Comparison With Laws of Other Countries.—It seems unnecessarily complex that needed drainage work should be retarded pending the approval of the Dominion Government for each separate drain. A study of the laws governing construction in various states and countries where such drainage work is extensively conducted invites comparison of the above proposal with the Volstead Federal Drainage Law which obtains in Minnesota. There were in this state large tracts of federally owned, rich, swamp lands lying idle and unproductive for want of drainage. The Volstead Law brought them under the conditions of the State Drainage Act by the following clauses:—

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all lands in the State of Minnesota, when subject to entry, and all entered lands for which no final certificate have been issued, are hereby made and declared subject to all of