

Engineering Department

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The Drainage Aid Act.

The act which has recently passed the legislature providing for aid in the making of common outlets, is of interest to nearly every municipality and should be carefully considered in future when drainage works are undertaken.

The act covers works proposed for any of the following purposes: (a) To provide or improve that portion of the trunk channel constituting the outlet for the drainage work; (b) to furnish capacity over intervening high lands to a natural or other outlet; (c) to render more effective the operating of a drainage work by embanking, pumping or other mechanical means.

The object of the people taking advantage of the first drainage laws was to remove surface water, to enable the use and cultivation of swamps and wet lands, to provide proper plans and organization of forces, to collect and properly expend the money for this purpose, and to equitably levy against the lands benefited, the entire cost of the work. The intention was to secure the least expensive and easiest disposal of such waters.

So successfully have these laws operated that they have been taken advantage of in every part of the province, with the result that thousands of acres have been reclaimed, and otherwise benefited. About \$5,000,000 has been spent upon drainage works, lands previously sold for fifty cents per acre, are now among the most productive in the province, and are worth from \$50 to \$60 an acre.

Since the introduction of these laws conditions have changed. The increased drainage caused the swamp lands to settle, flat lands along rivers, streams and watercourses have been put to greater use, have increased in value, and a greater appreciation of tile underdrainage has arisen. These changed conditions have demanded deeper and more effectual drainage, with a consequent deepening and extending of outlets.

So long as water is not confined in artificial channels, lands are required to take care of the natural flow, but when confined in artificial channels those undertaking the work become liable for the complete discharge of the water without injury to lands below. Frequently we find lands heavily taxed for building outlets, three, four or more miles away in order that the lower lands through which the drain passes, may not be injured. Thus we have drains being constantly extended at the expense of people who are necessarily assessable, although not directly benefited by the improvement; but for the purpose of preventing injury to lands several miles away.

In some cases it is found that ample

fall for the drainage above is secured in entering ravines, channels and streams, but owing to the waters being confined and brought down at greater volume and speed, it is necessary to continue the drainage works by extending the channel below to avert injury to bottom lands, and often the cost of making these extensions and doing such works of straightening and clearing the channel although necessary in consequence of the drainage work, is out of proportion to the benefit to the lands liable for assessment.

In many instances the cost of these outlets, though rendered necessary by the drainage works, is out of proportion to the benefit to lands liable for assessment; and an outlay has been created far in excess of what was anticipated when the drains were commenced.

In providing for the drainage of upper lands, it has been necessary to protect the rights of the owners of lower lands through which these drains and outlets pass. The trend of legislation has therefore been to require such outlets as will protect these rights, the cost to be borne by the lands inaugurating and directly benefited by the drainage.

Thus the cost of first construction has been greatly in excess of what was first expected. Not only so, but the people in taking advantage of their laws, did not foresee the added expense of cleaning and repairing drains and outlets. The cleaning and repairing is periodically demanded at a considerable outlay. The large expenditure therefore, in excess of what was anticipated when the drainage work was undertaken, was not provided for by the people, and has created a great deal of dissatisfaction.

In the construction of these outlets, provision must be made not only for the water of the land primarily intended to be drained, but for the water already flowing in the channel, and often for a large flow of water naturally reaching the channel from lands which cannot fairly be assessed for any part of the drainage works.

Again along rivers and streams such as the Nation, Holland, Sydenham and others, wide stretches of land are constantly flooded by back waters, while other lands are threatened and frequently injured by freshets where the removal of natural and artificial obstructions would not only remove this cause of injury, but would reclaim thousands of acres of fertile lands and permit of the drainage of tracts in the watershed where in many instances drainage is impossible, and in other cases imperfect in consequence.

Where all the lands through which the drain passes are benefited, it is not difficult to apportion the cost. The difficulty arises in cases where expensive outlet

works are constructed, it may be several miles distant from the lands benefited.

The expensive extension of these works through such channels, the difficulty of distributing the amount over the territory affected and the difficulty of proving benefit, and the seeming injustice of the tax, has provoked much feeling, and has led to costly litigation, which in turn has eventually swelled the expenditure and greatly increased the burden.

The cost of these extensions, in order to complete the drains already undertaken and of these necessary works included in schemes now contemplated, and the danger of litigation, cause the owners to hesitate in the further drainage of swamp lands. By lessening the amount of taxation imposed upon the people by these expensive outlets, the cause of friction in draining swamp lands will be largely removed, and encouragement will be given to prosecute the more difficult schemes of drainage, and provide proper outlets for those already undertaken, most of which are still incomplete.

In some parts of the province as in Essex and Kent, there are wide stretches of submerged land which cannot be properly drained without the construction of embankments or dykes, and use of pumping station machinery, such as the Pike Drainage Works in the township of Raleigh, and the Skinner Drainage Works in the township of Chatham, each reclaiming about 5000 acres. These are very expensive works, which a small appropriation for first construction would greatly stimulate.

The object in making appropriations to aid this work is not, however, so much to give pecuniary assistance to owners in the drainage of their lands, for experience has amply demonstrated that as a general thing when properly drained, these lands are among the most productive in the country and have rendered ample return for the outlay. It is for the purpose of recognizing a seeming injustice caused by the uniform action of the statutes in protecting the rights of the owners of flat and bottom lands, as well as the difficulty in apportioning the cost according to the benefit. It is for the purpose of lessening the cause of litigation, removing friction and prejudice, and smoothing the operation of the drainage laws which are now as near perfect as they can well be made, thereby encouraging a continuance of drainage works and the reclamation and improving of the remainder of the waste lands of the Province.

The reclamation of these lands will increase the assessed value of the municipalities in which they lie, and will thereby decrease the general taxation; and it will also swell the volume of the country's produce and is therefore a public benefit which is within the sphere of the government to foster.

The electors of Port Dalhousie have passed a by-law granting a bonus of \$6,500 to a rubber factory.