



LAND IMPROVEMENT
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CROPLAND DRAINAGE OUTLETS

The Most Important Drainage Feature

A drainage outlet (or outfall) is the point at which sub-surface drainage water is discharged to a drainage channel or natural watercourse.

Properly installed drainage outlets are critical to the trouble free operation of a sub-surface drainage system. They are also an important point of interest to the public that may be affected by the management of the cropland that the drains serve, and by any impact that a drainage installation may have on receiving waters.

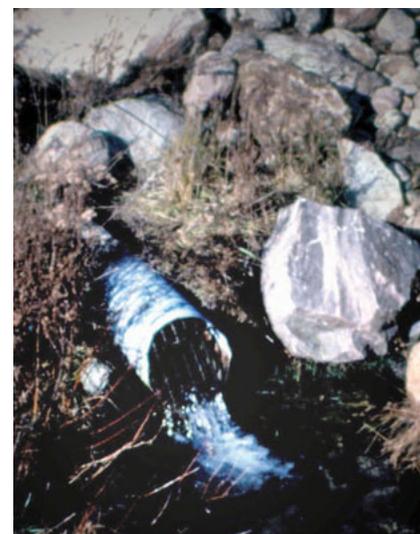
It is therefore important that the outlet be functionally, technically and legally acceptable. Several parties have responsibility for this.

- The Conservation Authorities (CA) regulate watercourses and wetlands under the Conservation Authorities Act and regulations. They may also act on behalf of the Ministry of Natural Resources (MNR), Ministry of the Environment (MOE) and Fisheries and Oceans Canada. They are particularly interested in water quality and quantity, habitat protection, and land management activity that could affect watercourse flow and potential flooding. The number of outlets, the location, how the outlet is constructed and the time of year for the construction may all come under regulation.
- The Municipal Drainage Superintendent must be notified before installing an outlet in a municipal drain channel. They will be concerned about: the impact an outlet may have on the drain; that the outlet is properly constructed; that water from outside the watershed is not diverted into the drain; and the location of outlets to avoid damage to them during

drain maintenance. Municipal drains are communal drains constructed to provide outlet for sub-surface drainage systems. They come under the Authority of the "Drainage Act", are designed by drainage engineers and are the responsibility of the municipality for improvement, repair and maintenance.

- A LICO drainage contractor will check that all approvals are in place and all regulations are addressed before an outlet is installed. The contractor will construct the outlet so that it will cause minimal disturbance to receiving waters and will meet or exceed all regulations and drainage installation standards. Contractors install clean drain pipe and want it to remain clean. They will make every effort to avoid contamination to the drainage system because contamination soon becomes pollution at the outlet. Typically, contractors will provide a drainage plan that will show the location of outlets and place a marker at an outlet to ease maintenance. LICO drainage contractors and their equipment are licensed under the Agricultural Tile Drainage Installation Act to regulate the quality of work provided.
- The farmland owner/operator has responsibility to get approvals where required for an outlet installation, repair or maintenance, and to ensure that the outlet is kept clear of debris, sediment and the rodent grate is functional. Careful soil, nutrient and manure management will do much to ensure that the water discharged from the drain outlet will be clean. If maintenance is required for an outlet that is located in a municipal drain then the Drainage Superintendent should be notified.

The public forms their opinion about cropland drainage mostly by what it sees at the drain outlet. This is the face of drainage. Outlets should be properly protected from erosion, be well maintained and discharge clean water.



A drain outlet pipe should: discharge water beyond the embankment, be a minimum of 12" above the stream flow, be protected from flood and ice damage and be equipped with a rodent grate.

NOTES/ RESOURCES

- Legal considerations and procedures for obtaining an outlet are in OMAFRA Factsheet "Drainage Legislation", Order No. 89-166
- Cropland Drainage Best Management Practices
- Factsheet "Operating and Maintaining a Tile Drainage System", Order No. 10-091, AGDEX 752/555



The Land Improvement Contractors of Ontario (LICO) is an association of professional drainage contractors and suppliers of drainage pipe and equipment. The focus of their business is soil moisture management to enhance crop production in Ontario.

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