

## **Use of Drainage Act Assessments to Evaluate Costs of Rural Natural Channel Design**

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In Ontario, the Drainage Act provides for a legal process for the design, construction and maintenance of rural drainage infrastructure. Unlike an urban stormwater system, where the costs are shared among the taxpayers in a municipality, the Drainage Act process is a user – pay system, where the costs of a drainage project are borne only by the landowners within the system. Drainage assessments detail the costs to all landowners involved.

While the piped drain is often most practical for agricultural landowners (no land taken out of production), it is the least resilient from a stormwater management perspective. A natural channel designed drain is much more resilient to large storm events and provides additional water quality benefits – but is often the most costly.

Using a case study, our proposal was to compare the designs and costs to landowners and municipalities of a piped drain, trapezoidal channel and a natural channel design in an agricultural drainage system. While it was not funded, the project design offers a system for evaluating the costs of rural natural channel design and the barriers to adoption (which are often significantly different than in urban settings).

Using landowner assessment schedules, the costs of each of the three designs could be compared using industry standard processes for calculating drainage assessments. In this way, the costs to individual landowners on each of the three designs can be easily compared. The case study would involve an existing drainage system where sufficient data exists that would allow the three drainage designs, specifications and assessments to be prepared.

A group of municipal drainage superintendents and a representative from a Conservation Authority could then review and compare the assessment schedules, considering:

- Construction costs
- Maintenance costs and considerations
- Individual (such as land out of production, and maintenance)
- Potential environmental benefits
- Policy and program implications