Natural purification systems could solve sewage problems

The Standard - May 30, 2003

Introducing constructed wetlands to Niagara as a way to purify sewage and other polluted water is an exciting new development, and one we hope will gain momentum here.

Wednesday's Standard featured a story on EastDell Estates winery in Beamsville, which found itself in a difficult situation. It was spending thousands of dollars to truck its sewage and winery wash water to treatment plants. EastDell was nowhere near municipal sewer hookups, and its rolling landscape made it impossible to install the traditional septic bed, which requires a flat terrain.

After considering the alternatives, the owners decided to spend what they would lay out for a septic bed on a constructed wetland.

Such man-made wetlands provide a more efficient version of the processes nature uses to break down excess nutrients and unfriendly bacteria. In EastDell's case, wastewater runs from the septic tank into a series of three 'cells' one metre deep. Inside are cattails growing in layers of sand and gravel. The water travels through each cell in turn, emerging from the natural biological processes clean enough to be re-used flushing the restaurant's toilets and urinals.

The winery saves $2,000 to $3,000 annually on its water bills and figures it will save $6,000 a year in trucking costs to send diluted grape juice to a water treatment plant. That should help in recouping the cost of constructing the wetland - between $75,000 and $100,000 - something that wouldn't be possible if the same money had been spent on the traditional tile bed.

The same approach to waste water treatment was used by Vineland Estates and Niagara Under Glass, two other well-known names in the region. Clearly, this is not fly-by-the-seat-of-the-pants technology with no basis in reality. The process uses are natural ones, with the added benefit that a wetland doesn't break down or require the kind of maintenance a typical sewer system does.

The problems caused by operating such wetlands in Canada's cold climate seem to have been overcome, and Canadians may become more receptive to an idea that has taken hold in warmer U.S. climates.

W hope that day comes soon. Use of wetlands to process waste water seems to us a much more environmentally friendly way to deal with sewage and polluted water than what we have used in the past.

Changing the minds of city councilors may prove difficult, as was seen when Niagara-on-the-Lake town council decided in march to choose an Oakville firm to build a traditional, big-pipe sewer line to carry St.Davids' sewage to Niagara Falls for treatment.

A constructed wetland had been an alternative proposed by Edgar Lemon, a retired professor of environmental physics at Cornell University. But council decided to spend $8.4 million on a sanitary sewer system. Critics argued it would have been cheaper to treat the water naturally at the source, rather than pump it so far to be processed at a sewage treatment plant. Perhaps the real test will be in determining which option can be expanded the most economically to accommodate growing populations. As for us, we're putting our money on wetlands, a system nature perfected millions of years ago.