



Building Better Homes and Communities

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ACT Solutions

Getting Municipal Regulatory OK for Green Wastewater Solutions, NovaTec Consultants Inc., Vancouver, BC

Issue

BC's Municipal Sewage Regulation (MSR), introduced in 1999, allows construction of privately owned tertiary wastewater treatment plants, providing water reuse options for new communities. Car washing, golf course irrigation and toilet flushing are examples of permitted reuse of wastewater.

Land developers, in theory, could now install decentralized or distributed wastewater infrastructure services for subdivisions, in place of the standard "big pipe solution", provided the installations complied with provincially regulated wastewater discharge standards.

Many municipalities had bylaws, though, that prohibited the subdivision of property based on package treatment plants, and many were reluctant to allow private sector delivery of wastewater utilities.

This regulatory conflict slowed the development of 'green' wastewater solutions and limited developers'

servicing options to either traditional big pipe extensions or septic fields. It was an expensive regulatory barrier, as the standard options result in higher development costs.

Plan

With the assistance of an ACT grant, the project team explored the disparity between the provincial legislation and municipal bylaws through extensive interviews at both levels of government. Using this input, they assessed BC's MSR as an instrument developers could use in offering private sector wastewater treatment solutions, with water reuse options, in new housing developments.

Project team

NovaTec Consultants Inc.
Dr. Greg Finnegan, planner
User Friendly Homes
BC Ministry of Water, Land and Air Protection
Capital Regional District (Victoria)
Prof. Patrick Condon, UBC



Wastewater reuse options, such as bioreactors, offer a cost-effective alternative to traditional sewers, but the regulatory environment at all levels needs to support their use.

Source: ECOfluid Systems Inc.

Results

The project team conducted telephone interviews with district managers and compliance officers in the Ministry of Water, Land and Air Protection regional offices to get their opinions on BC's MSR and its application. The most common problems identified were an inability to interpret plan requirements, an inability to finance servicing under the MSR, high consulting and other fees, and

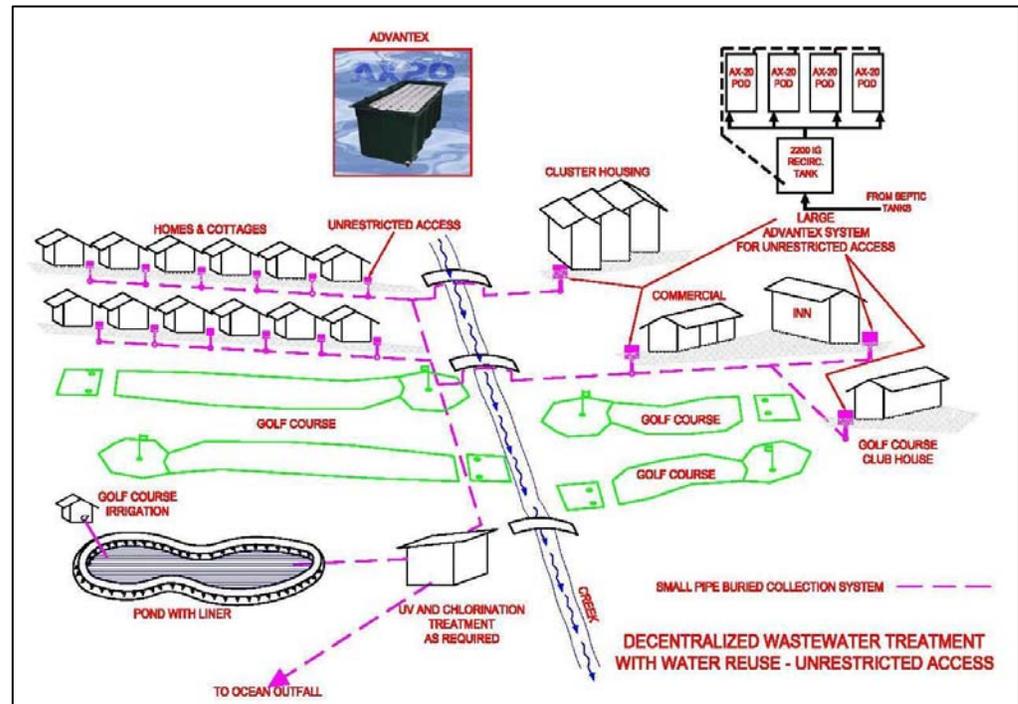
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This diagram illustrates a potential wastewater reuse system featuring residential housing and a golf course.

Source: Dr. Greg Finnegan



the failure of regional engineering and environmental firms to work through the MSR.

Also, BC's MSR was designed to reduce municipal approval times to 90 days, compared to the previous permitting system, which averaged up to two years. While Ministry processes had been streamlined, new barriers arose at the municipal level impeding MSR application to residential land development projects.

An extensive questionnaire, completed by 17 communities across British Columbia, provided substantial municipal input. Their responses reinforced input from other sources indicating that barriers to green infrastructure fall into five overlapping categories:

1. financial — fiscal impact unknown; higher upfront costs; reuse water may be too costly given subsidized municipal water rates; lack of incentives; lenders' risk and security;

2. legislative and political — lack of political will to support sustainability; local vs. regional impact and inter-jurisdictional conflicts; caution and risk avoidance on using "new" technology vs. accepted, traditional solutions; lack of policies, municipal bonusing to encourage investment in green options

3. permitting and code — existing requirements, rigidity; lack of guidelines for building green; variances required;

4. construction and building — liability issues; safety concerns; competition and bottom line concerns in a very competitive sector; availability and knowledge of products and services at competitive rates; time involved in pursuing new approaches and working through regulatory issues; and

5. educational — lack of municipal resources and funding for R&D; differing knowledge levels

amongst engineers, architects, builders, trades and the public; community fears related to water and environmental issues; lack of seamlessness between different government levels, departments and regulations; and lack of third party, impartial centre of expertise to access for advice.

"The questionnaire allowed us to gain a greater understanding of municipal legislative barriers that may exist to the application of the MSR to residential development projects," the project team reported. "Based on the often well thought-out and argued positions of municipal managers we are in a stronger position to make recommendations regarding revisions to the MSR while building a stronger understanding of the applicability and acceptance of green technologies in wastewater treatment at the municipal level."

Two case studies helped to define the issues facing residential land

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developers and the municipalities in which they operate. The first study involved a 100-home subdivision development, and the other looked at a Gulf Island residential development with a golf course.

In the first study, although the developer had proposed a viable green option, the municipality was uncomfortable with the concept of a privately owned and operated wastewater treatment system. The perception of risk posed a greater barrier than the actual level of risk likely to be encountered with the on-site treatment system. For the municipality, the traditional big pipe solution was perceived as being a more secure, risk-free option.

The second project involved an advanced water treatment system to use reclaimed water for golf course irrigation (diagram on preceding page). This one benefited from another green system already in place. As well, the developer had a strong track record in providing potable water as a private water utility. These two factors contributed to creating a sense of security for the municipality in permitting an alternative treatment system.

The project team noted that BC's MSR requires us to "question existing ways of planning and servicing our urban developments". When such regulatory changes are introduced by a provincial government, they need to be clearly communicated to others through workshops and briefing sessions.

Risk reduction needs to be addressed as well. "Risk, the perception of risk and risk avoidance are common themes associated with innovative or alternative wastewater treatment at the municipal level of government," the project team concluded. They recommended alleviating risk either through legislation allowing sustainable technology-based projects or through improved third-party verification of technologies, to provide support to municipal engineers and planners.

The project team also found that MSR target audiences had not been reached, nor had the benefits (reduced infrastructure and environmental) been adequately demonstrated. BC's MSR provides a strong foundation that can support unique and innovative solutions for reusing wastewater, they said, but it has not been adequately accepted nor applied to have made an impact upon the traditional big pipe solution.

"The study found considerable reluctance on the part of some municipal and provincial regulators to accept projects that employed a private sector MSR-type approach to infrastructure development," says Senior Community Planner Dr. Greg Finnegan. He remains convinced, though, that "working within this legislation, private firms can deliver sewage treatment services as a means of servicing new housing developments".

Related reports

Innovative Wastewater Treatment and Residential Development in British Columbia: Interpreting Municipal Government Attitudes to the Municipal Sewage Reuglation 1999 (Dr. Gregory Finnegan, 2004)

This report is available from the ACT website. See "ACT projects & solutions".

Contact

Dr. Greg Finnegan
Senior Community Planner
NovaTec Consultants Inc.
Vancouver, BC
eganfinn@telus.net
604-922-0777

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c/o The Federation of Canadian Municipalities
Tel: 613-241-5221 ext. 242
Fax: 613-244-1515
E-mail: info@actprogram.com

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