



## INSIDE

New testing requirements for B.C.'s drinking water are expected to have little impact on larger developers ...

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# WATER

# WASTE

Annacis Island treatment plant courtesy of GVRD

## Conference: Pertinent issues on the agenda

Environment Minister Barry Penner kicks off four days of water and waste

WARREN FREY  
STAFF WRITER

**B**.C.'s water and waste industry is converging on Whistler this week to talk trade and transfer skills and knowledge.

The British Columbia Water and Waste Association's annual general meeting will bring together key players and stakeholders in the province's water industry for four days of networking and education.

"At this year's opening ceremonies we have a keynote speech from Dr. William Rees from the University of British Columbia and a special guest speaker, Barry Penner, the B.C. minister for the environment," BCWWA communications director David Icharia said.

The conference spanning from April 29 to May 3, with Penner speaking at the conference's opening ceremonies.

Penner's experience as park ranger and outdoor enthusiast has driven him to protect the environment and to encourage responsible methods of energy generation. He has been a strong advocate for small-hydro, wind power and other new energy sources.

Dr. Rees will be explaining his work on the ecological footprint, an analysis tool that measures how humans affect the surrounding environment in terms of appropriated land and water use. This tool is widely used by many governments and institutions worldwide.

Another highlight of the conference is the two technical



**"It's the largest event west of Ontario. And because we combine water and waste, we tend to be leaders for a lot of the industry."**

— David Icharia

transfer sessions next Wednesday. Both day-long sessions are designed to educate conference goers on major issues in the industry.

One session tackles creating a Canada-wide strategy for managing municipal wastewater effluent, and is titled "Everything I need to know about the future of municipal wastewater discharges."

That session examines both a National Municipal Wastewater Effluent Strategy, an initiative from the Canadian Council of Ministers of the Environment, and how that strategy impacts British Columbia's municipalities.

It will also provide stakeholders and representatives from government agencies a chance to offer feedback on the national strategy.

The other transfer session, entitled "The Anatomy of a

Waterborne Outbreak, or Epidemiology 101," will examine both the principles behind epidemiology and the methods used to combat an outbreak situation. The session is aimed at waterworks administrators, consulting engineers and administrators, as well as regional health authority staff.

In addition to the transfer sessions, more than 105 papers will be released at the conference, Icharia said.

Many other sessions will tackle topics as diverse as green building practices, emerging technology, distribution and disinfection and water quality in the southern Okanagan.

The conference will also host 130 different exhibitors related to B.C.'s water and waste industry.

Because the conference (and the association itself) focuses on both water and waste, the BCWWA's event is one of the largest in Western Canada, Icharia said.

"It's the largest event west of Ontario. And because we combine water and waste, we tend to be leaders for a lot of the industry. In Ontario, two separate associations cover water and waste," he said.

The conference will attract more than 1,000 attendees, and because of its size the venue alternates between Whistler and Penticton, Icharia said.

"Those are the only two places with big enough venues for our needs, other than in Vancouver," he said.

Besides the sessions and the trade show, event organizers have attempted to expand the social programs for participants. Therefore, attendees will also enjoy a golf tournament on April 29 at the Fairmont Chateau Whistler Golf Course, as well as a banquet. Tours of the area are also be offered.

For more information about the conference or the organization, go online to: [www.bcwwa.org](http://www.bcwwa.org).

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Sewer heat recovery technology will be incorporated into a new False Creek neighbourhood being developed in Vancouver.

WARREN FREY



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DEALING WITH WASTEWATER

# Recovering heat from sewage, new in Canada

PETER KENTER  
CORRESPONDENT

Most wastewater leaving homes and businesses is warmer than the surrounding environment, a fact on which countries outside of Canada are already capitalizing.

Projects in Sweden, Germany, Finland and Japan show waste energy from sewers can be efficiently transferred to clean water used to heat homes or provide residential hot water, said Ken Church, community planning, sustainable buildings and communities' manager with Natural Resources Canada.

"I would say that the technology is not yet popular in Canada because we've never had to do it before," he said.

"Low temperature heat recovery requires particularly bulky equipment that puts some people off. And why buy a heat exchanger for \$20,000 when a boiler costs only a few thousand? Canada is not the centre of the universe when it comes to sustainable thinking," Church said.

A 2005 study by Vancouver's Compass Resource Management, Sustainable Energy Technology and Resource Assessment for Greater Vancouver, indicates the most cost-effective applications for sewer heat recovery are new sewer lines or lines that need to be replaced, because the cost of retrofitting existing lines is prohibitive.

But while capital costs for new applications are high, operating costs are low, said Robert Hicks, an engineer with the policy and planning department in the Greater Vancouver Regional District.

"It's essentially the same technology that's used in extracting geo-thermal heat with heat

pumps," Hicks said.

The technology has already proven effective for industries using large volumes of hot water — commercial food processing plants and laundry facilities, for example.

"Typically we can recapture up to 90 per cent of the energy from warm wastewater," says Carroll Gorrell, president of Kemco, a U.S. company that manufactures heat recovery equipment.

Heat recovery from cooler sewage is less efficient, but still economically viable. Swiss technicians have developed a general formula for sewer heat recovery, Hicks said.

"Two-thirds of the upstream heat from sewer water can be recaptured to heat the lower third. Using current heat exchange technology, you can heat water to a maximum of 50 degrees Celsius. That water temperature can then be boosted to 54 degrees for home heating."

New Westminster, B.C. has identified a sewer heat exchange system as a preferred heat source for its new Poplar Landing housing development.

The City of Vancouver will be incorporating the technology in a new neighbourhood development on the southeast corner of False Creek, an urban development on former industrial lands.

Since the heat can't be stored for very long, having a residential "load" is essential to the efficiency of a sewer heat recovery system, Hicks said.

"Turning these old industrial lands into residential and commercial neighbourhoods provides a wonderfully feasible demonstration of the technology. And there's never a problem finding enough sewage."

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# Wastewater treatment not necessarily LEED compliant

Engineer examines merger of green-building principles in wastewater realm

**WARREN FREY**  
STAFF WRITER

If wastewater treatment facilities want to be LEED compliant, they may have to find innovative ways to build "green."

Manjit Herar, an environmental engineer with Vancouver-based Associated Engineering, will elaborate this weekend.

She's addressing the issue at the British Columbia Water and Waste Association's annual general meeting.

The seminar, entitled "Wastewater Treatment," will examine different methods employed throughout the province to deal with upgrading and maintaining wastewater facilities.

Herar's talk will take a more holistic approach, as she explains how to bring green-building principles to the wastewater management arena.

It's an increasingly important area for engineers and others in construction to learn, she said.

"Engineers don't often address these issues, but more municipalities are mandating environmentally friendly building," Herar said.

But though municipalities are taking a greater interest in environmentally conscious measures, they also don't often have full awareness of the limitations of LEED.



**"Engineers don't often address these issues, but more municipalities are mandating environmentally friendly buildings."**  
— Manjit Herar

"For instance, some don't realize that something like a pumping station can't be LEED certified. It's primarily meant for institutional and commercial buildings, and when you're asked to conform to LEED, you have to educate municipal employees as you go," Herar said.

But despite the fact that LEED certification isn't always applicable on a project, the engineering industry can still adapt some of its practices independently, she said.

Herar will also bring examples to the seminar of Associated Engineering's implementation of green designs that were not LEED, but did follow similar principles.

One such project was a recently installed sewer overflow tank in New Westminster. The tank was designed by AE, and was installed in former brownfield land, which has since been reme-

diated by the company.

"Once we put in the tank, we also made the surrounding area into a park, in order to give something back to the community," Herar said.

Other methods of adopting LEED-like practices could include putting environmentally friendly measures right into construction documents, she said.

But some green methods are out of the hands of the engineers.

Each individual municipality mandates grey water use, an increasingly popular method of recycling wastewater, Herar said.

"It's a health and an environmental issue. Some may allow it, but they might also have to get additional approvals to do so," she said.

Other wastewater initiatives covered by the seminar will include upgrading of the Iona Island wastewater treatment plant by Stantec Consulting, treatment plant

rehabilitation challenges in Castlegar, and work done on the Lions Gate facility in the Greater Vancouver Regional District. Environment ministry's Conrad Pryce will moderate the seminar.

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## Selecting professional consultants

Development of a guide outlining best practices for selection of professional consultants is on track, the Association of Consulting Engineers of Canada (ACEC) reports. A first draft is expected this month.

The project is being undertaken by a task force under the auspices of the national Infra-Guide network, which has published a collection of best practice documents for core infrastructure.

The facilitators are professional engineers John Bremner and Chuck Gale, who have broad experience in municipal infrastructure and procurement issues. ACEC is represented by past chair Andrew Steeves.

In a recent newsletter, ACEC said the current project "is progressing well." The association said it is "delighted" that the project is being implemented in accordance with the established schedule.

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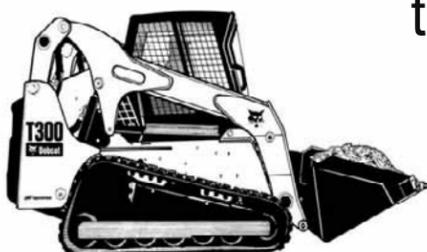
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## CREATING A BALANCED PLAN

## Okanagan developers juggle growth and sustainability

WARREN FREY  
STAFF WRITER

The Okanagan, one of B.C.'s fastest growing regions, is also one of the driest in Canada.

A seminar this week at the British Columbia Water and Waste Association's annual conference in Whistler will discuss initiatives and solutions for the area, including work by developers and the building community.

Developers are doing their part to ensure their work doesn't interfere with the region's

delicate balance of economic growth and environmental sustainability.

"We have good builders in the region who are starting to recognize the importance of green practices. They're trying to be part of the solution," said David Arsenault, the RDOS regional growth strategy co-ordinator.

New developments in Osoyoos, for example, are making sure their water is kept on site, rather than being drained into Osoyoos Lake and affecting water quality, he said.

The British Columbia Water and Waste Association's Water Sustainability Committee (WSC) is partnering with the regional district of Okanagan-Similkameen, as well as the REFBC and the provincial government to advance a "water-centric" approach to planning across the Okanagan through a regional growth strategy.

Arsenault will be one of the presenters at a half-day session called "Water Sustainability in the South Okanagan." Along with Meggin Messenger from the Ministry of Community Services, he'll explain the goals of the growth strategy and summarize practices that lead to water sustainability in the region.

And water is a huge concern to South Okanagan residents, Arsenault said.

"We use more water in the South Okanagan than anywhere else in B.C., since it's practically a desert. We need to manage and preserve what we have, because it isn't an infinite resource," he said.

It's also important to preserve the rural character of the area, including the agriculture that defines the region, and in order to do so, water use has to be managed properly, Arsenault noted.

The Real Estate Foundation of B.C. is also taking part in the sustainability effort through a "Communities in Transition" program for the South Okanagan. It emphasizes a balanced approach to social, environmental and economic well-being in rural areas.

Tim Pringle of the REFBC will also address the issues during this weekend's seminar.

Kim Stephens, the program co-ordinator for the Water Sustainability Action Plan for British Columbia, will moderate the seminar.

The plan provides an umbrella for a variety of initiatives throughout the province, including work in the South Okanagan. The WSC has been working on the plan since 2003, which has an overall goal of "advancing a water-balance way of thinking and acting," and the South Okanagan has seen many projects coming into alignment towards that goal, Stephens said.

**"We focused on the South Okanagan because it's a ready-made pilot project ..."**

— Kim Stephens



"We focused on the South Okanagan because it's a ready-made pilot project that's manageable in scale, and then we can roll out what we find across the province," he said.

This month, the provincial government also pledged, along with the Okanagan Basin Water Board, to commit \$550,000 to complete the second phase of a water supply and demand study for the Okanagan Basin.

The study will provide information to the board's new Water Stewardship Council, as well as local planners and water managers. The study will cover the status of existing water supplies in the Okanagan Basin, the current demand on that supply, anticipated demands and the creation of a model to estimate available water supply and demand for present and future use.

## DETECTING PROBLEMS

## Closer monitoring proposed to reduce, not eliminate leaks

KORKY KOROLUK  
CORRESPONDENT

OTTAWA

The city of Ottawa is losing about 63 million litres of water every day through leaks in its water distribution system, and it wants that total reduced.

The leakage amounts to about 18.6 per cent of the water the system carries, and reducing it won't be cheap.

But there are offsetting benefits.

"We need to optimize our system because the less water we lose, the more capacity we will have in our current system," said city Coun. Peter Hume, who chairs the environmental services committee.

"That means more capacity to accommodate future growth without having to make significant investments (in new or enlarged treatment plants)."

Decreasing the leakage would mean "we're only investing when we have to, as opposed to investing because we're losing so much water" Hume said.

All water systems leak — through joints or through breaks. And in a city with 2,700 kilometres of pipe carrying 340 million litres a day, the potential for leakage is great.

But a city staff report suggests that by spending about \$340,000 a year for the next 10 years, leakage could be reduced to about 40 million litres per day — a figure staff considers within industry standards for cities in similar situations.

Much of Ottawa's pipe is old, and because of cold winters with a lot of freeze/thaw cycles, ground movement can cause leaks.

The plan advanced by staff proposes that pipe be scanned every 18 months instead of the present five years. The goal would be to pinpoint potential trouble spots and make repairs before leaks occur, and to install special meters to monitor the pipe and alert staff to leaks more quickly.

That way, the staff report says, it would be possible to reduce water losses to 13.5 per cent, or 40 million litres per day, from the present 18.6 per cent of the water processed



**"We need to optimize our system."**  
— Peter Hume  
Ottawa councillor

by the city's two plants.

That may still seem like a lot to many people, but Ottawa's water is drawn from the Ottawa River, a large and relatively pure source since there are no large cities or industries upstream pumping pollution into the stream. That means treatment costs are low, and so are the water rates charged.

With relatively low costs, spending a lot of money to reduce leaks even more is an exercise in diminishing returns.

Hume said a couple of other measures are being contemplated. One is monitoring water pressure, because it tends to rise slightly after the city has gone to bed.

"If we lower the pressure by a couple of ticks at that time, we might be able to reduce the potential for leaks and breaks."

And meters for industrial users — presently installed where the water enters the building — could be placed instead at the property line.

There are about 500 kilometres of privately owned pipe in the city, but as long as leaks occur outside the building, the city pays for repairs. With metres at the property line, Hume said, the pipe owner would pay, "so there would be an incentive for the people who have large pipe systems outside of their buildings to have an active leak detection program."

The topic of drinking water conservation and efforts to classify and quantify water use and losses will be addressed at this weekend's water and waste conference in Whistler.



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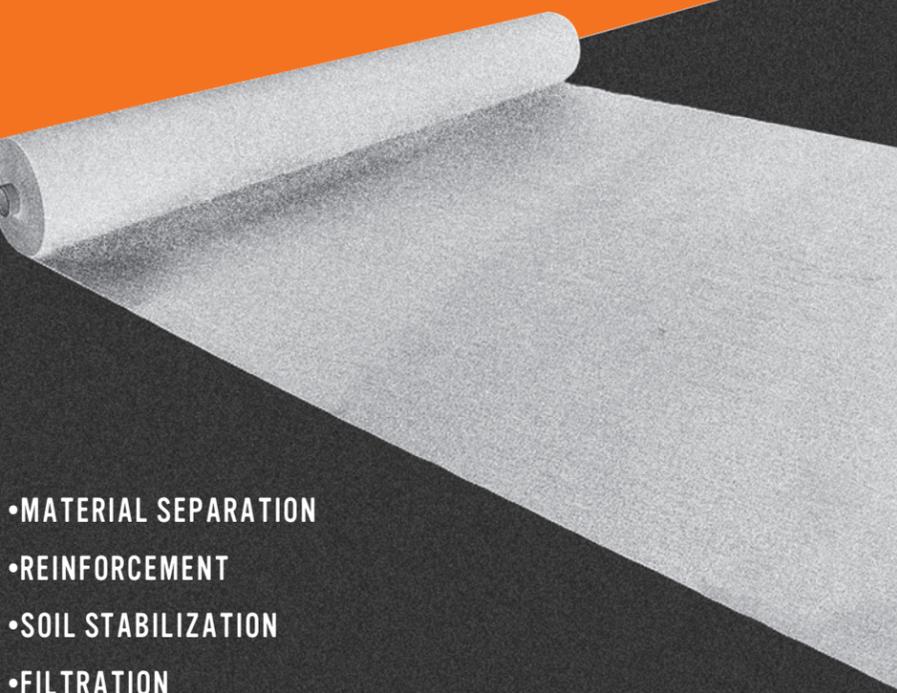
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## CHANGES TARGET SMALLER WATER SYSTEMS



ROXANNE HOOPER

B.C. Ministry of Health introduced changes to the Drinking Water Protection Act, requiring water be tested for E. coli. But these and other changes are not expected to impact most of B.C.'s larger developers.

## New rules aimed at ensuring clean water

Modifications were made to the Drinking Water Protection Act of B.C. this month, but they are not expected to impact significantly on most of the province's larger developments.

The new, mandatory rules are aimed at ensuring drinking water from the smaller water systems are safe for human consumption.

Any drinking water samples sent to a laboratory for standard bacterial analysis, must now be tested for E. coli or what we have come to know as E. coli.

"Clean water has long been recognized as being critical in controlling the spread of human disease," said Chad Born and Melanie Sawyer, co-chairs of the B.C. Water and Waste Association analytical lab committee.

"In order to deem water as clean, or potable (drinkable), a water sample representative of the water source must be analyzed. Due to costs and time constraints, water samples are not routinely tested for every type of pathogen (disease causing substance)," the pair explained.

"Instead, laboratories analyze for indicator organisms to make accurate inferences as to the water's suitability for human consumption."

Some other changes were made to the B.C. drinking

water regulations last year.

Those amendments were designed to create a better framework for monitoring small water systems in B.C.

The new regulations, covering systems supplying up to 500 people a day, are described by the province as

being more flexible.

The most significant change was giving power to a drinking water officer to determine certification based on the complexity and risks to the water system, rather than simply following a rigid list of dictated criteria.

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## Proving less costly

Mounting social costs make trenchless technology popular

PETER KENTER  
CORRESPONDENT

In recent years, Canada has seen advances in the use of trenchless sewer and water-main construction and rehabilitation techniques, such as pipe bursting and sliplining.

One reason the newer technologies have taken off is the way we factor the cost of disrupting road traffic.

In the traditional construction model, utilities chose a construction company based largely on the immediate cost of performing the work, while the community absorbed the business and human costs associated with traffic congestion, dirt, noise and restriction of access.

Dr. Dana Vanier, a senior research officer with the Institute for Research in Construction at the National Research Council of Canada, is co-author of the 2005 study "Social Cost Considerations for Municipal Infrastructure Management."

The study estimates that the social costs of construction can account for up to 400 per cent of construction costs on certain projects.

"Originally, trenchless technologies were more expensive than open cut," said Mark Knight, Associate Professor with the Department of Civil Engineering at the University of Waterloo (UW) and Executive Director for the Centre for Advancement of Trenchless Technologies.

"To justify the price quoted in a low-bid system, you had to justify the use of trenchless technologies on life-cycle and social costs. Including those costs, trenchless became cheaper," Knight said.

A 1999 study, "Traffic Delay Cost Savings Associated with Trenchless Technology," shows that trenchless technology provides economic benefits when the costs associated with traffic delays are quantified, said Ralph

Haas, a professor in the Department of Civil Engineering at UW, and one of the authors of the study.

"As traffic levels increase, user delay costs can be significant," Haas said. "The numbers supporting trenchless technology over open cut technology can be very significant."

Trenchless technologies are also becoming more popular because construction project contracts now include financial penalties for excessive traffic delay. In Tokyo, trenchless technologies became more common in the early 1990s when the city placed time limits on lane closures.

"In the U.K., construction projects now include a lane rental cost," says Knight. "A construction company will have to rent any traffic lane it wants to shut down and must include that cost in its bid."

The City of Waterloo has banned open excavation within one-and-a-half times the drip line diameter of city trees.

"Of course, the streets are lined with trees, so trenchless technology has to be used," says Knight.

"The rules of the game start to change because of the availability of the trenchless alternative."

Dr. Vanier is currently working on a study that will help to further fine tune the costs of urban infrastructure rehabilitation operations, including a look at trenchless technology.

As well, an expanded version of his 2005 study, to be conducted at the University of Regina this year, will incorporate real cost data obtained from the cities of Regina and Saskatoon.

"Some of the information favouring trenchless technology comes from the industry itself and may be biased," says Vanier.

"These studies will help to improve our ability to quantify the costs of various construction alternatives."



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PRAIRIE DROUGHT CONTINUES

# Water crisis looming

Alberta scientist calls for slowdown or halt to growth until solution is found

**A**lberta and Saskatchewan are facing an unprecedented water crisis that could have a major ripple effect on the construction industry.

The water crisis is due to a combination of global warming, the energy boom and increased human consumption, explained one of the world's leading environmental scientists. For those reasons, among others, he's proposing a halt or at least a slowdown of development until a solution can be discovered.

The western Prairie provinces are facing much more than a seasonal drought, said University of Alberta's Dr. David Schindler, after his study for the U.S. Proceedings of the National Academy of Science was released earlier this month.

The new research shows significant shrinking of glaciers that supply water to rivers, snowpacks are dwindling and there is higher evaporation of precipitation being recorded.

Summer flow from the South Saskatchewan River, for instance, reportedly dropped 84 per cent in the last century. Rivers such as the Peace and Oldman are also recording at 40 to 60 per cent below historic values, the study said.

Summer flows in the lower reaches of the Athabasca River, which supplies water to the massive oil sands projects in northeastern Alberta, have dropped 30 per cent since 1970. The study said extracting oil from the tar sand consumes three to six barrels of water for every barrel of oil produced.

If water use is not curtailed, both Schindler and co-author William Donahue, predict by 2020 the massive project could be consuming nearly half the low winter flow in the river that is critical to fish and the eco-system.

He recommends the multi-billion dollar projects be scaled back until engineers figure out how to recycle and reuse the water.

"The thing I object to is that they are just plowing ahead with the technology that they have now because they can make such big profits," Schindler said.

Alberta's rapidly growing population, much of it due to the robust economy

and influx of workers to the oil sands, also means more of the diminishing water supply

is being used up -- not only for personal consumption, but by agriculture and particularly industry.

So Schindler is also recommending Albertans consider if and where they want population and industry to increase.

He was one of the lead authors of this new study. He has long since been warning about a looming water shortage, but said even he was "shocked" by some of the findings.

He knows his views will not be liked, and even though he was in Los Angeles last week to receive an international award for his work, he is expecting this recent report will generate hate mail from his critics.

Nevertheless, Schindler is willing to speak out. He believes politicians in Alberta are on the right track trying to develop sustainable water policies, but said much more needs to be done.

Although reducing greenhouse emissions will have the greatest effect several decades from now, he said it would have little short-term impact.

Politicians need to curb growth, mandate water conservation, and cut greenhouse gas emissions if there's any hope of protecting watersheds and wetlands and ultimately the water supply we currently take for granted.

"We cannot replace the glaciers so our only alternative is to get very serious about water conservation and protection of the watersheds that supply our water. For example, it is imperative to use less water for agriculture through drought resistant crops or incentives for water conservation and to consider reusing water and low-flow devices as ways to conserve our supply."

A water crisis is looming, he said.

"As we show, the less water available to dilute pollutants, the more water quality problems we will have," Schindler added.

Parts of the southwest United States are currently experiencing water crises for the same reason.

"I don't think we want to face the same problems Los Angeles or Phoenix has, but they will come unless we start protecting our water."



**"I don't think we want to face the same problems Los Angeles or Phoenix has, but they will come unless we start protecting our water."**

— Dr. David Schindler



A majestic water falls has freeze up in the winter wonderland of the Rocky Mountains. Environmentalists fear global warming is going to eat away at the remaining glaciers, causing a major water shortage.

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## NORTHERN B.C. STILL A CONCERN

# Province records above average snow

Good year of snow and rain in southern B.C. should translate to good news for the construction industry

**ROXANNE HOOPER**  
STAFF WRITER

While builders in Alberta and Saskatchewan are being warned of another year of potential drought conditions and efforts afoot to slow or halt development, the picture seems much brighter in B.C.

There's a call to curb growth until a solution can be found to Alberta's pending water crisis. But that doesn't translate the same in B.C., said Ministry of Environment river forecaster Allan Chapman.

The concern in the Prairies stems from global warming and the way it is permanently diminishing the glacier ranges in areas such as the Rocky Mountains, between Banff to Jasper, Chapman explained.

Consequently, a biologist from the University of Alberta said his province is in grave danger of running out of water.

While Chapman respects the work and opinions of his colleague Dr. David Schindler, the B.C. scientist clarified that it's a very different climate in British Columbia -- both literally and figuratively.

In B.C., glacier flow typically only accounts for less than five per cent of the annual runoff, meaning the province's water supply is reliant more on snowpacks and spring rains.

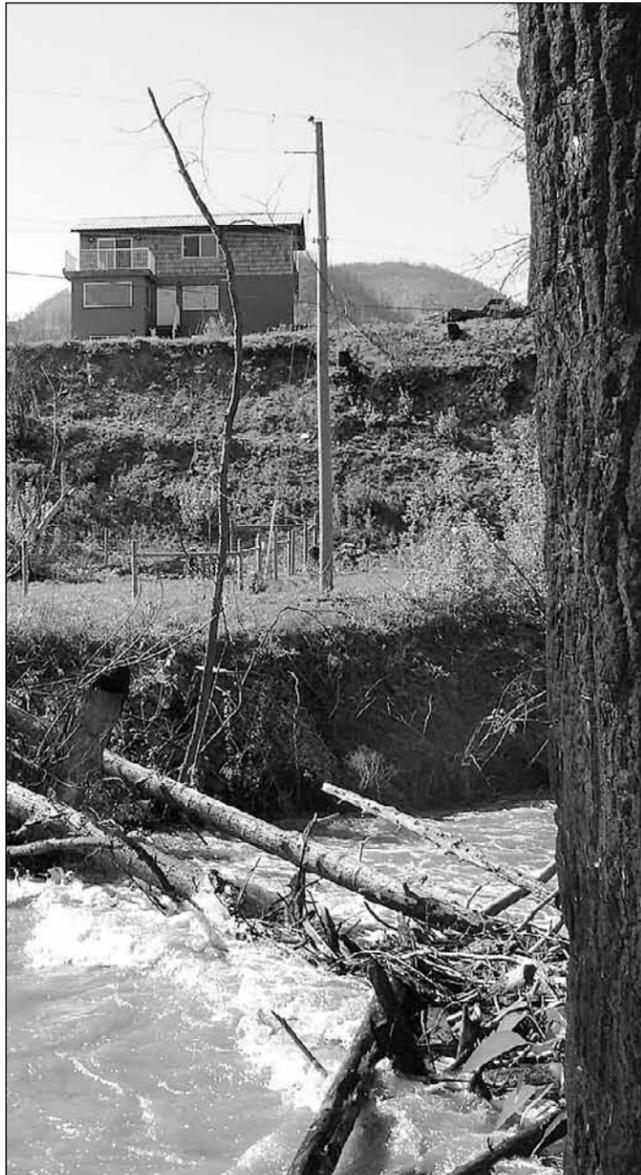
For this reason, he doesn't fear that B.C. is actually going to run out of water -- although misuse could still pose a threat, Chapman said. The annual water levels, therefore, are expected to have little if any impact on the province's construction.

Nevertheless, Chapman said the threat of a drought in B.C. brings with it other problems such as crop devastation and tinder-dry wildfire conditions.

Such was the case in 2003, when fires destroyed hundreds of homes and some commercial buildings in the B.C. Interior that had to subsequently be replaced.

So what lies ahead for B.C.'s water supply this summer?

Overall, Chapman described it as



Spring run off is expected to start next month. Last year's run off caused a number of log jams throughout the province, including this one in the small community of Louis Creek in the North Thompson region.

ROXANNE HOOPER

the best year in 10 for snow levels and water supply.

It's not looking too bad based on the winter snowmelt that typically feeds many of the province's rivers, water reservoirs and underground streams for wells, he told *The Journal of Commerce*.

Much of southern B.C. saw average or above-average snowfall accumulations meaning most major rivers in the province will be hit by the snowmelt in late May or early June, as usual.

Snowfall throughout the Okanagan, Kootenays, Vancouver Island and even the Fraser Valley were actually about 120 per cent of normal, he said.

The same can't be said for Northern B.C., which experienced below-normal snowpacks this winter.

In communities north of Quesnel, such as Prince George and the Peace River regions, snow conditions were only 75 to 80 per cent of normal.

While it's not a crisis situation, it could lead to some concerns, Chapman said.

"They're way below where we want them to be," he added.

While drought-like conditions could be possible in those regions this summer, the B.C. forecaster remains hopeful a wet spring could still turn things around.

"We still have six more weeks of spring before we get into the summer season. They could get some more rain in the northern part of the province and alleviate some of the water supply concerns," Chapman said.

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## EMERGING TECHNOLOGY

# Sewers from hell

Richmond engineer and Golder Associates shows off new wastewater pump at this weekend's water and waste conference in Whistler

WARREN FREY  
STAFF WRITER

For the city of Richmond, a "sewer from hell" turned into a chance to create a new way of dealing with wastewater.

Richmond experienced a local state of emergency in January 2005, when a sink-hole opened up on the No. 3 Road, causing structural damage to nearby buildings.

Since then, city engineers have been hard at work on a way to prevent another such disaster, and they've come up with a tiny and portable solution.

Jim V. Young, an engineer for the City of Richmond and Naresh Koirala, from Golder Associates, will elaborate on their innovative use of technology at an upcoming seminar on emerging technologies.

They're making a presentation entitled "Another Sewer from Hell – the Richmond Perspective" on May 1, during the British Columbia Water and Waste Association's annual general meeting in Whistler.

"It's basically a portable pump station that fits right in a manhole. It's built, and it's ready to go," Young said.

With the new system, a blocked sewer anywhere in Richmond can be brought back into operation quickly, and the pump is easily operated remotely from a central location.

The device consists of a five-horsepower pump installed inside a can the size of a manhole lid.

The pump then rests on the manhole bench at the bottom of the sewer, and the pump is hooked into the piping system.

"From there we can bypass sewage to different parts of the system. It took us years to come up with the idea and work on it, but only a week to actually build," Young said with a chuckle.

Currently, Richmond has three of the units ready for deployment.

Though the conventional wisdom is that since Richmond is below sea level, sewer problems are more difficult to deal with, the truth is that it's a blessing in disguise, Young said.

"When you have a blocked sewer, the system essentially becomes a big storage reservoir, which we couldn't do if we were above sea level. In someplace like North Vancouver, where there's a lot of elevation, that just wouldn't be possible," he said.

The pump system isn't the only innovation Richmond has introduced to the wastewater management world.

Richmond's engineering department has also created a "grout curtain," which replaces sheet piling and dewateres the ground without causing structural damage to surrounding buildings, Young said.

This system works by injecting holes in the ground, filling them with grout, and continuing the process until a "wall" is created.

"It's essentially a matter of creating an impenetrable barrier between where the building is being retained and where excavation must take place. The grout curtain stops water movement from one side to the other, which would cause the building to settle as we lower the water table," Koirala said.

He said he used the grout curtain system extensively while based in Hong Kong, but "other than Richmond, it hasn't been used anywhere else, though we are getting expressions of interest."



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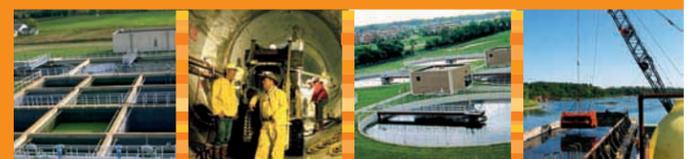
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