



Wastewater Watch

An Okanagan Falls Sewer Project **UPDATE**

November 2009

Senior government funding supports wastewater treatment plant upgrade project

The Regional District of Okanagan Similkameen (RDOS) is getting \$6.25 million from the federal and provincial governments to build a new wastewater treatment plant south of the existing site, and to provide capacity for the eventual sewer servicing of the Skaha Estates and Kaleden lakeshore areas. The \$10.1-million project will begin with detailed design work this year; construction will likely commence in 2010.

Looking Back...

Five years in the making, the project will address various wastewater issues identified during the 2005 Okanagan Falls Sewage Treatment Plant Strategic Review Study — namely that the existing plant is too close to residential development and too small to adequately treat the larger flows expected from growth in Okanagan Falls and the extension of sewer service to nearby areas.

The review was completed with input from the Okanagan Falls Wastewater Advisory Committee (WAC). After studying existing conditions and potential solutions, WAC members short-listed ten options for more detailed consideration. The option ultimately recommended by the WAC included construction of a new BNR (biological nutrient removal) plant south of the existing site. Advantages of this approach include increased capacity and the elimination of noise and/or odour impacts on residential or commercial areas. Treated effluent from the new plant can also be recy-

clered for agricultural irrigation and/or the development of wetland habitat.

A subsequent survey showed that 80 percent of area residents agreed the Okanagan Falls wastewater treatment plant had reached capacity and, therefore, should be upgraded or replaced. Almost 90 percent of respondents agreed that, upon confirmation of two-thirds federal/ provincial funding, the RDOS should proceed with development of a new plant downstream of the existing site. Thirty-five percent thought the RDOS should move forward even without senior government funding.

In 2007, sewer-servicing options were assessed for the communities of Kaleden and Skaha Estates. A November 2007 survey of Skaha Estates and Kaleden residents shows that 98 percent believe Skaha Lake is an important natural resource that should be protected,

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You're Invited!

The Regional District of Okanagan Similkameen and the Okanagan Falls LWMP Advisory Committee invite you to share your thoughts about the future of wastewater facilities and services in Okanagan Falls and surrounding areas.

OPEN HOUSE

Wednesday, November 18th
OK Falls Elementary School
1141 Cedar Street
4 PM to 8 PM

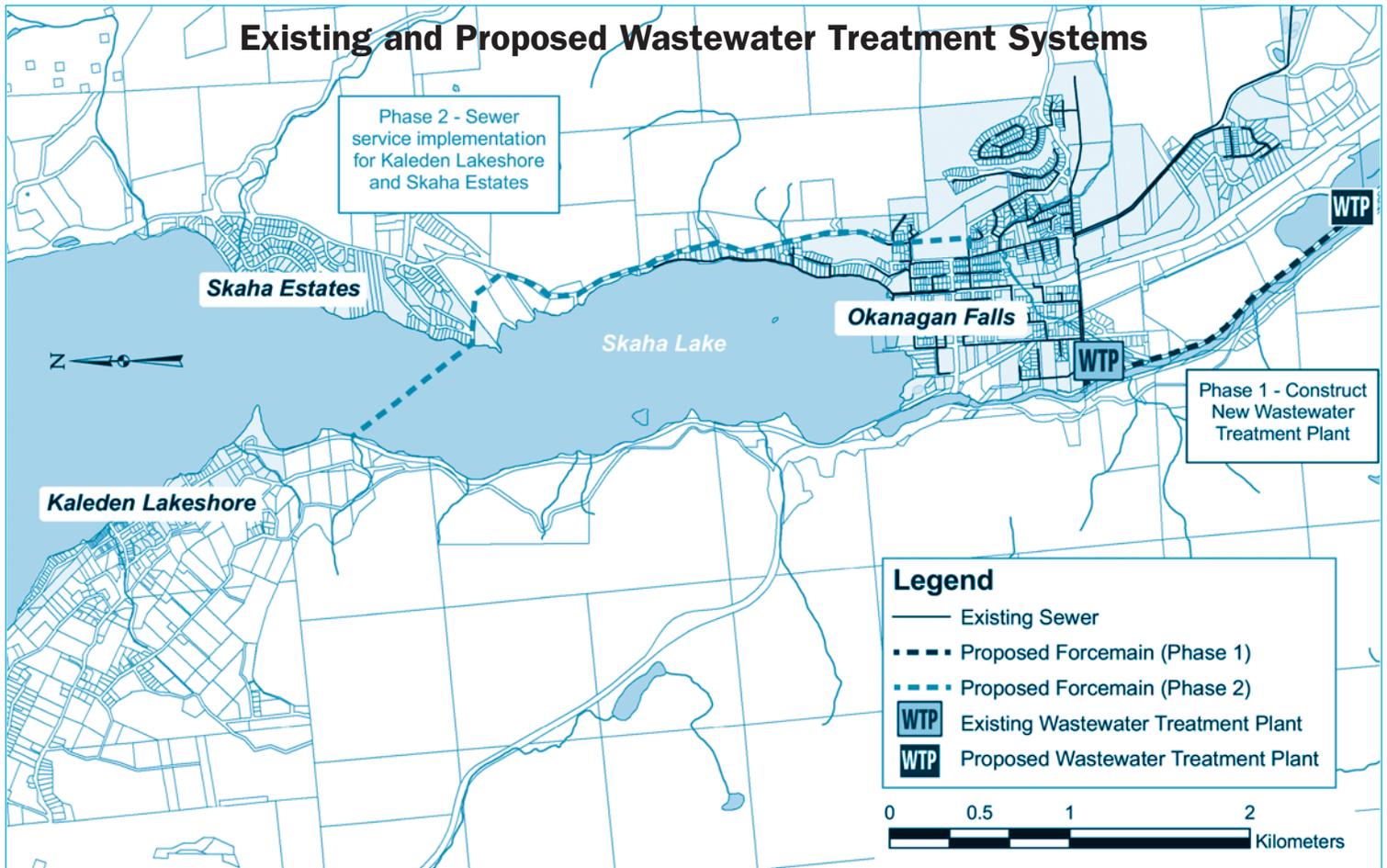
Presentations will be given at 5 PM, 6 PM, and 7 PM
Committee members, Regional District staff, and engineering consultants will be available to answer your questions.

For more information call Darcy Kirkpatrick at the Regional District 250-490-4112

Annual Sewer Fees for an Average Single-Family Home (with Grant Funding)

Residents of	Existing Annual Sewer Fees	Annual Fees after Stage 1 Construction of New Plant to Service Existing Okanagan Falls Area
Okanagan Falls Area	\$435	\$639

The calculations assume that capital costs will be financed over 20 years at a Municipal Finance Authority rate of 5.3 percent. At the end of the 20-year term, the sewer fee would decrease and consist of only the operational costs. The operational cost is estimated to be \$395 per household per year for the Okanagan Falls Area.



Sewer update

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while 83 percent agree the installation of community sewers will protect the lake from pollution caused by aging septic tanks. The public also endorsed a recommendation to service the most environmentally and health-sensitive areas along the lakeshore. The lowest cost option involved pumping wastewater from these areas to an expanded Okanagan Falls treatment plant. The survey indicated that 80 percent of Kaleden and Skaha Estates respondents agreed with this approach, provided grant funding was made available to offset the costs.

Strong public support from the Okanagan Falls, Kaleden and Skaha Estates areas prompted the RDOS to apply for senior government funding, research potential sites, and update its Liquid Waste Management Plan (LWMP). In 2008, the RDOS bought a 0.9 hectare (2.2 acre) property south of the existing plant where the KVR right-of-way crosses the Okanagan River Channel. In 2009, the regional district embarked on the process of

updating its LWMP. Given that the 2005 strategic review was conducted with extensive public input, the Ministry of Environment considered it a precursor to the LWMP update process, and authorized the RDOS to develop a streamlined, combined Stage 1/Stage 2 LWMP Report rather than the three-stage process normally required for an update of this complexity.

With Provincial/Federal funding for the new treatment plant now in place, and its LWMP in the final stages of approval, the RDOS has applied to the Okanagan Basin Water Board (OBWB) for additional grants to help offset costs to the Okanagan Falls Area residents. The value of this grant has not yet been determined.

Next Steps...

Engineering consultants will be hired to undertake detailed technical analysis and design, and detailed costing. The objective will be to construct a modern treatment facility that blends into the natural surroundings and with high standards for odour control. Construction is anticipated to begin in late 2010.

The Bottom Line

Implementation of the treatment plant and expansion of the sewer system will occur in phases.

The first phase will consist of building a treatment plant with sufficient capacity to service the Okanagan Falls, Kaleden lakeshore, and Skaha Estates areas. The total projected cost of the treatment plant is \$10.1 million with \$6.25 million covered by senior government funding.

In the second phase, the sewer system will be extended to include the Kaleden lakeshore area and Skaha Estates. The timing of the second phase will depend on the availability of grant funds to assist in paying for installation of the sewer services.

The previous table on page 1 provides an estimate of the annual sewer fees for the Okanagan Falls Area. The annual sewer fees include capital costs and operational costs for the new treatment plant and sewer system. Once the Kaleden and Skaha Estates areas tie-in to the system, sewer fees for Okanagan Falls residents will decrease to account for sharing of the operational and capital costs of the treatment plant.

Treatment plant under pressure

Built in the '70s to process about 750 cubic metres of wastewater daily, the Okanagan Falls sewage treatment plant is located near the confluence of Shuttleworth Creek and Okanagan River. Its simple treatment process — including an oxidation ditch, clarifier, sludge drying beds, and infiltration basins — has served residents well for two decades.

In the early '90s, a multi-family housing complex was built next to the treatment plant. As the original sludge management system was not designed for odour or noise control, the Regional District of Okanagan-Similkameen (RDOS) began receiving complaints from nearby residents.

Then came capacity concerns. By the late '90s, wastewater flows had increased by about 25 percent, producing peak summer flows as high as 920 cubic metres per day. Development potential within the Okanagan Falls Sewerage Service Area aggravates concerns about current and future capacity.

For the plant to continue operating within the limits of its current operating permit, and in accordance with the Liquid

Waste Management Plan approved by the province in 1989, a series of immediate upgrades and long-term measures were required. In 2004, the RDOS established a Wastewater Advisory Committee (WAC) to review options, hired a project coordinator, and contracted with consulting engineers to develop interim and long-term plans for wastewater treatment in Okanagan Falls and surrounding areas. The resulting recommendations by AECOM — which were supported by the WAC and included in the subsequent Liquid Waste Management Plan Amendment — include construction of a new BNR (biological nutrient removal) plant at an appropriate location downstream from the existing site.

Based on the level of public support shown for a new plant during the 2005 Strategic Review, the Regional District of Okanagan Similkameen has since purchased a 2.2-acre site south of the existing plant where the KVR right-of-way crosses the Okanagan River Channel. Senior government funding has now been secured, therefore plant design will proceed later this year. ■



Architectural renderings showing possible views of the new treatment plant from the east and west.

Why BNR (biological nutrient removal)?

Historically, wastewater treatment plants used 'primary treatment' to remove only organic solids from wastewater before the resulting effluent was released into receiving waters such as lakes and rivers. Because wastewater effluent contains nitrogen and phosphorus at levels sometimes toxic to human and aquatic health, 'tertiary' or 'secondary treatment' is now recommended and often required as a condition of discharge to receiving waters.

The preferred option includes a proven tertiary BNR (biological nutrient removal) process that is reliable, robust, operator-friendly, and extremely adaptable to changing flow and load conditions. The proposed treatment process is based on the "three-stage Bardenpho" BNR process which removes carbonaceous



material (BOD), phosphorus and nitrogen.

With filtration and disinfection, effluent from the BNR process is of a drinking water standard. The high

Nitrogen and phosphorus act as fertilizers, which promote the growth of algae and other aquatic plants such as Eurasian Milfoil. These unwanted side effects pose serious recreational and environmental problems (e.g. reduced oxygen levels for fish). BNR treatment, such as that used in the Summerland plant, removes nitrogen and phosphorus before the wastewater effluent is discharged to receiving waters.

quality effluent provides for a range of uses and disposal methods. The effluent can be reused as irrigation water,

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OK Falls Wastewater Management Process

2004/5

WAC undertook strategic review of wastewater policies, processes and programs



WAC identified options for wastewater treatment and plant siting



RDOS survey the public for input regarding treatment and siting options



RDOS applied for senior government funding

2006

RDOS assessed treatment and siting options identified by the WAC



RDOS explored the possibility of extending sewer service to Skaha Estates and Kaleden



RDOS applied for senior government funding

2007

RDOS surveyed Skaha Estates and Kaleden residents to determine their support for extending sewer service to their areas



RDOS sourced and assessed potential properties for a new treatment plant



RDOS applied for senior government funding

2008

RDOS bought and rezoned property south of existing site



RDOS applied for senior government funding

2009

RDOS launched a LWMP (Liquid Waste Management Plan) for the Okanagan Falls, Skaha Estates, and Kaleden areas with input from the Okanagan Falls LWMP Advisory Committee



RDOS entered into discussions with the Ministry of Environment and Ducks Unlimited regarding habitat enhancement at the new plant site



RDOS applied for senior government funding and received approval for \$6.2-million grant



AECOM will present LWMP Stage 1, 2, & 3 Reports to the RDOS Board for adoption and the MoE for approval



RDOS will host an open house to inform residents of the project



RDOS will hire a consultant to begin detailed plant design

Why BNR? continued from page 3

discharged to a river or used to enhance habitat in wetland environments.

BNR technology was implemented in Canada in the late 1970s when the first BNR plant was constructed in Kelowna to address nutrient impacts to Okanagan Lake. BNR plants in other Okanagan communities have proven successful, such as those in Summerland (on the previous page) and Lake Country. ■

THANK-YOU!

The Regional District of Okanagan Similkameen (RDOS) thanks the Okanagan Falls Wastewater Advisory Committee and LWMP Committee members for their input during the strategic review of regional wastewater policies, programs, and services, and the development of the subsequent Liquid Waste Management Plan for Okanagan Falls, Kaleden, and Skaha Estates.

LWMP Committee members included representatives from the public; the RDOS; the BC Ministries of Environment, Agriculture & Lands, and Community & Rural Development; Interior Health; Ducks Unlimited; the Okanagan Basin Water Board; and the Penticton Indian Band.

Public Representatives

Bill Schwarz, RDOS Director Area D

Sam Hancheroff

Ken Hayter

Gerry Hughes

Dan Larter

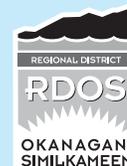
Ted Lynch

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Thank-you to the following elected officials for their support: Okanagan-Coquihalla MP Stockwell Day, Penticton MLA Bill Barisoff, and Boundary-Similkameen MLA John Slater.



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