

# 2012 TOWN OF CANMORE WATER & WASTEWATER PERFORMANCE REPORT



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# OUR STORY

Everyone has a story and EPCOR's is about our people – the ones who keep your water and wastewater systems operating 24 hours a day, all year-round, even in the most severe weather. Last June's high water event in Canmore is one such story.

## EPCOR CREWS CONQUER HIGH WATER EVENT IN CANMORE

EPCOR manages water, wastewater and storm water systems for the Town of Canmore. Our crews were put to the test ensuring these systems could handle much higher than normal volumes during a June flooding event. More than 100 millimetres of rainfall, combined with a historically high snowpack, led to very high water levels in the Bow River and in the ground.

The high groundwater levels lead to some soaked Canmore basements and water seeped into the wastewater collection system. The full wastewater collection system then overloaded the wastewater treatment plant. During this period, the plant reached its highest flows ever. It then successfully maintained flows at levels three times higher than what is normal, without any exceedences of its operations permit.

Other high water events occurred in the Canmore area in 1974, 1993 and 2007. EPCOR's capital improvements, rehabilitation and preventative maintenance all helped to lessen the most recent occurrence. "Our crews really stepped up to the plate," said Al Petrie, EPCOR's Canmore Site Manager. "In addition to ensuring all our systems were functioning properly, they were also helping the town with flood protection — like helping to fill sandbags." In summary he noted, "The experience we gained during the 2007 flooding event really helped us this time around. Our commitment to continuous improvement means there were no sanitary back-ups or violations to our Alberta Environment Approval to Operate during the latest high water event."





## 2012 PERFORMANCE HIGHLIGHTS

For EPCOR's Canmore staff, operational excellence takes many forms. In 2012, we maintained service reliability and quality during unforeseen events, worked to ensure the quality of the community's water source, and provided good value to the Town of Canmore on operational and capital projects.

Our employees demonstrated their focus on operational excellence by keeping treated water flowing to Canmore residents during multiple high water events and when a major pipe failure at one of the water treatment plants reduced the Town's water supply in half. They worked to ensure the community's drinking water and wastewater management met or exceeded standards for safety, reliability and quality during these unforeseen events and throughout our regular operations.

We understand the first step in ensuring a safe water supply is to manage the quality of a community's water source. Across EPCOR last year, we provided more than \$100,000 and our professional expertise to various groups that work to protect water resources, including the Bow River Basin Council.

Providing value is important to us, so in addition to grants that benefited the broader community, we also negotiated a new biosolids hauling contract which was an important factor in saving the Town \$100,000 in operational costs compared to the previous year. Furthermore, we continued with our diligent project management of the multi-year wastewater treatment plant upgrade and expansion.

This report contains highlights of our 2012 activities related to the environment, quality assurance, customer care and community, safety, operational excellence and capital projects. It also includes a summary of Canmore's water and wastewater systems.



## PARTNERSHIP OVERVIEW

With over a century of utility experience, we are the contractor chosen to manage six water and/or wastewater operations in the Bow River Basin: Canmore, Banff, the Evan-Thomas area of Kananaskis Country, Strathmore, Chestermere and Okotoks. In fact, we provide clean drinking water and wastewater services to over one million people in 75 communities across Western Canada — serving municipalities and industrial clients from the tip of Vancouver Island to the Northern Alberta oil sands.

Since 2000, we have supplied a wide-range of services to the Town of Canmore including water and wastewater treatment, water distribution, wastewater collection, storm drainage, meter reading, customer billing and account management. We have a fixed-price, performance-based utility management agreement with the Town to continue providing services until 2020. The Town sets utility rates and retains ownership of all the waterworks-related assets on behalf of the citizens of Canmore.

### HOW WE MEASURE SUCCESS

A Customer Satisfaction Survey conducted by an independent survey company in 2011 showed 99 per cent of Canmore residents were satisfied with the performance their water and wastewater service provider – EPCOR. We work in partnership with the Town to ensure our performance meets the consistently high standards that Canmore residents expect. In each community where we have water and wastewater contracts, we are accountable to deliver service that meets key measures for Environment, Customer Care, Safety, Quality Assurance, Operational Excellence and Capital Programs.

These measures are set in cooperation with the Town of Canmore and the applicable provincial regulators. A capital program and operations budget, along with detailed reporting of several performance indicators, is also approved annually by Town Council.

## ENVIRONMENT

Many EPCOR employees work outdoors or at a treatment plant connected to waterways so working in concert with the environment comes naturally to us. First we divert and treat source water, delivering the treated water to our customers while encouraging conservation. Then, at the other end of the system, we treat the wastewater so the effluent being put back into the Bow River is as good or better than when we extracted the raw water.

We take great pride in our role as stewards of your water supply. For example, we are working with our EPCOR Water Canada environmental experts to develop an Environmental Protection Plan for the Canmore wastewater treatment plant. The plan establishes the desired environmental outcomes and strategies for land, air, and water. The Environmental Index table below shows our proactive environmental activities jumped from 12 in 2010 to 70 in 2012. Many of these activities are preventive management best practices identified in last year's site audit conducted by EPCOR's Risk Assurance group.

Environmental Index								
Activity	Actual Values						Target Values	
	2006	2007	2008	2009	2010	2011	2012	
Environmental Releases	0	8	3	0	2	5	3*	6
Violations to the Approval to Operate License	4	3	3	3	4	4	9**	9
Proactive Activities	6	10	16	0	12	23	70	9
Completion of Required Regulatory Reporting	100%	100%	100%	100%	100%	100%	100%	100%

\*Alberta Environment requires any release of materials to the land, air or water be reported, no matter the amount or impact. In 2012, EPCOR reported three environmental releases to Alberta Environment. 1) As a courtesy we forwarded a third-party complaint about septic field contamination on private property. 2) A large water pipe break released a significant amount of treated water into Pumphouse #1 causing equipment damage but this water was retained within the site. 3) A split in a large collection pipe released some wastewater but the leak was caught quickly and the material removed. Alberta Environment did not request any follow-up reporting since all three events were minor in relation to the environment.

\*\*Like a license to operate a vehicle, where violations might range from dirty vehicle headlights to being involved in a serious accident, EPCOR has an approval to operate Canmore's water and wastewater treatment facilities. Alberta Environment requires all water and wastewater facilities have an Approval to Operate License and any type of violation must be reported. EPCOR reported nine violations to Alberta Environment. Two were administrative in nature and the others were primarily as result of mechanical equipment failures. There was no further follow up required by Alberta Environment. Some of the equipment issues will be remedied by planned upgrades to the wastewater treatment plant and an active preventative maintenance program is in place to minimize any other future mechanical problems.



## WE ALL LIVE DOWNSTREAM...

EPCOR is committed to safeguarding the health of our customers in Canmore and strives to understand and protect the source of drinking water supply – the Bow River. But we don't stop there. We also consider watershed protection downstream by examining the impact wastewater operations have on the environment.

Canmore is located within the Bow River watershed and obtains its drinking water from both surface and groundwater sources in about equal quantities. Canmore's groundwater supply is fairly well protected because it is downstream of Banff National Park.

In order to address some water-related issues, we are an active participant in the Bow River Basin Council – a multi-stakeholder, charitable organization dedicated to improving the management and protection of water resources in the basin area.

We believe every creature deserves a healthy habitat so we are also taking part in a Government of Alberta cumulative effects management system initiative in the basin. The project identifies ways to reduce the amount of phosphorus in a section of the Bow River. Excess phosphorus contributes to decreased oxygen in the water supply which, in turn, can harm fish and other fresh water inhabitants.

## SUPPORT FOR ENVIRONMENTAL STEWARDSHIP

Last year, EPCOR donated more than \$100,000 and our professional expertise to various groups that work to protect water resources locally, provincially and nationally. These include:

- Bob Sandford, EPCOR Chair of the Canadian Partnership Initiative in support of United Nations "Water for Life" Decade
- Various watershed partnerships, including one with Bow River Basin Council, that provide research and planning to address challenges with maintaining the health of water sources

## QUALITY ASSURANCE

The quality of our daily lives depends on essentials such as safe drinking water and proper sanitation. Our employees work to ensure your drinking water and wastewater management meets or exceeds standards for safety, reliability and quality.

Water quality is measured by analyzing the physical, chemical and microbial properties of the water. Health Canada has established science-based guidelines for drinking water known as the Guidelines for Canadian Drinking Water Quality. They set the maximum acceptable concentrations of chemical, microbial and radiological contaminants found in water. They also address aesthetic water quality issues such as colour, taste and odour.

We regularly checked around 75 of water quality parameters and conducted more than 2,000 tests in 2012. We also conducted about 6000 tests for ten wastewater quality parameters

We test water quality on a continual basis to ensure water quality and prohibit water distribution if we have any concerns. In fact in 2012, we closed one of two groundwater wells in Pumphouse #1 based on test results that showed the water's chemical composition was outside of the acceptable range outlined in provincial guidelines. We are partnering with Alberta Environment and Alberta Health Services to determine the external source of the water quality problem and to develop an appropriate solution.

Other quality assurance highlights from 2012 include successfully passing an Alberta Environment audit of the water system. On the wastewater side, we increased monitoring of influent and effluent quality in accordance with new federal wastewater systems effluent regulations. Our operations employees in Canmore conduct on-going water quality and wastewater tests in compliance with Approval to Operate requirements from Alberta Environment. EPCOR's Quality Assurance team in Edmonton supports our Canmore operation by conducting semi-annual audits to ensure we are in compliance with the water Approval and that all related laboratory equipment is properly calibrated.



### A QUALITY PRODUCT

Canmore residents rated their overall satisfaction with their **tap water quality** at **94 per cent**, according to the Customer Satisfaction Survey results provided by an independent survey company in 2011.





## CUSTOMER CARE & COMMUNITY

Our customer care philosophy is integral to how we operate in the communities we serve. We understand the importance our customers place on reliable water and wastewater services, therefore, we are available around-the-clock for emergencies. The following Customer Service Index shows we restored 100 per cent of water outages within 24 hours in 2012.

As a provider of essential services, it is a natural extension for us to support employee volunteering, donations and other initiatives that help create strong communities and healthy families. These initiatives fall in line with EPCOR's three community investment pillars, namely **Water** (Food), **Energy** (Shelter and Safety), and **Education**.

This year, we were proud to sponsor the Canmore and Area Health Care Foundation's Annual Golf Tournament and the Town's *Let's Get Moving – Water Run*. Rather than meeting our target of four community events, EPCOR sponsored two because we also made a significant grant donation benefiting Southern Alberta communities.

EPCOR's Community Essentials Council's (ECEC) allocates grants to worthy initiatives in all communities where we operate. This included a \$15,000 donation to Junior Achievement of Southern Alberta to help develop an understanding of business, financial literacy, work-force readiness and entrepreneurialism among rural students.

### DID YOU KNOW...

All reported water service outages were restored in less than 24 hours.



## YOUR GUIDE TO A SMALLER FOOTPRINT

Our epcor.com website offers an extensive library of resources, including water efficiency and energy guides, plus tips, calculators and tools to help you save energy and water around your homes or small businesses. We also offer educational resources and games for children, parents and teachers through eSmartKids at [esmartkids.epcor.ca](http://esmartkids.epcor.ca)

### 50 BEST CORPORATE CITIZENS

*Corporate Knights* magazine named EPCOR one of the [50 Best Corporate Citizens in Canada](#) for 2012. Corporations do not apply to be included on this list, but are instead ranked based on information sought out by the editors. Companies are assessed based on their environmental performance, including water and electricity efficiency, as well as social responsibility, diversity, transparent reporting and governance.

Customer Service Index								
Activity	Actual Values							Target Values
	2006	2007	2008	2009	2010	2011	2012	
% Of Service Outages Restored In Less Than 24 Hours	100%	100%	100%	100%	100%	100%	100%	90%
Customer Satisfaction Survey*	N/A	94%	N/A	91%	N/A	99%	N/A	85%
# Community Events Supported	13	10	10	12	7	7	2	4
Completion of Reporting and/or Internal Communication Targets	100%	100%	100%	100%	100%	100%	100%	100%

\*Customer Satisfaction Surveys are conducted every second year. This figure measures the overall customer satisfaction with the water and/or wastewater service supplier.



# SAFETY

## WORKING SAFELY TO GET HOME SAFE

People are at the heart of everything EPCOR does — and making sure our employees and contractors get home safely after work is a priority. In fact, our staff and contractors in Canmore haven't had a single lost time accident since the Safety Index was introduced in 2006. These positive results stem from our continual emphasis on safety training for existing staff, new employees and contractors.

The Safety Index below shows each employee received 26 hours of training on topics such as chlorine handling, transportation of dangerous goods, WHMIS, and gas testing, among others. It also notes there were 233 preventative activities carried out, including regular site safety inspections, safe work plans, and confined space entry permits.

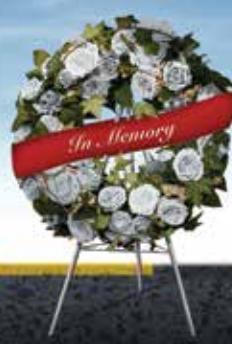
Safety Index								
Activity	Actual Values						Target Values	
	2006	2007	2008	2009	2010	2011	2012	
Safety Training (hours/employee)	Not Reported	37.8	55.2	21.5	41.5	35	26	8
# of Preventative Activities	193	132	115	83	104	164	233	55
Safety Meeting	12	12	12	12	12	12	12	11
# Lost Time Accidents	0	0	0	0	0	0	0	0

## A PARTNER IN ROAD CONSTRUCTION SAFETY FOR A DECADE

EPCOR's commitment to the *Working Safely to Get Home Safe* philosophy extends beyond our work sites into the broader community. For the past decade, EPCOR along with Alberta Transportation, the Alberta Construction Safety Association and several other public and private sector organizations have collaborated in *Partners in Road Construction Safety*.

The group looks at ways to reduce collisions in road construction zones and improve drivers' awareness of our people who work in those zones — making construction zones safer for everyone. Alberta drivers heading to work or returning home will recognize the popular "Don't RIP Through Construction Zones" campaign.

# Don't **RIP** through construction zones.



SPEEDING FINES DOUBLE WHEN WORKERS ARE PRESENT

[www.dont-RIP.ca](http://www.dont-RIP.ca)



### DID YOU KNOW...

There have been **no lost time incidents** at our Canmore operations for the past six years.





## OPERATIONAL EXCELLENCE

Our employees demonstrated operational excellence this year by keeping water flowing to Canmore residents during multiple high water events and when a major pipe failure reduced the Town's water supply in half. A water pipe failure at Pumphouse #1 resulted in major flooding damage and electrical problems within the site. Since Pumphouse #1 normally supplies water to half of the town, our employees had to carefully manage the distribution system for ten days using Pumphouse House #2, the only other water supply. Their dedication prevented a local water ban and allowed the Town to confidently welcome a large number of visitors for the Canada Day long weekend.

Operational excellence also includes good fiscal management. We negotiated a new biosolids hauling contract with Stickland Farms, which reduced the tonnage unit price by 21 per cent. This saved the Town approximately \$100,000 from the previous year, even with less tonnage hauled. This farm composts the biosolids which are then spread on canola fields to enrich the soil.

Preventive maintenance is another component of operational excellence and we proactively manage all infrastructure through regular maintenance, evaluations and improvements. The Quality/Efficiency Index below demonstrates that our preventive maintenance activities met or exceeded targets. For example, ongoing actions included cleaning and flushing of sanitary mains in approximately 40 per cent of the town. As well, 430 fire hydrants and 32 pressure reducing valves were inspected during the year.

Delivering operational excellence depends on knowledgeable employees so we actively encourage them to attain the highest level of Alberta Environment water and wastewater certification available. This year, three of our operators upgraded their Alberta Environment certification by one level.

Quality/Efficiency Index								
Activity	Actual Values					2011	2012	Target Values
	2006	2007	2008	2009	2010			
Rehabilitation Reporting	New Index measure as of 2010				100%	100%	25%	100%
Maintenance Activities	100%	100%	100%	100%	100%	100%	100%**	100%
Contract Reports	New Index measure as of 2010				100%	100%	100%	100%
Natural Gas Reports	New Index measure as of 2010				Below	Below	Below	Below Thresholds
Power Reports	New Index measure as of 2010				Below	Below	Below	Below Thresholds

\*\*Maintenance activities are in the process of being defined.

## CAPITAL PROJECT HIGHLIGHTS

Our expertise in managing utilities provides the Town with savings by delivering infrastructure projects at or below budget. We manage the capital costs in an innovative manner that minimizes risk to the Town. The most significant capital project we undertook in 2012 relates to the wastewater treatment plant upgrade and expansion plan. The plant sometimes has difficulty in removing solids which can result in effluent quality not always meeting regulated standards. To remedy this, a successful pilot study conducted by Degremont Technologies and Stantec Engineering determined that installing Dissolved Air Flotation (DAF) technology will ensure proper removal of the solids. The overall plan also addresses the plant's present and future capacity needs. Currently, the capacity is sufficient to meet the Town's population of 12,000 permanent and 6,000 non-permanent residents. However, expansion will allow Canmore to meet its potential build-out population of 31,000, including regional service to the Deadman's Flat area of the MD of Bighorn.

Our other capital project highlights include:

- Submission of a 2013 – 2017 capital plan which focuses primarily on completion of the wastewater treatment plant upgrade and capacity expansion
- Installation of baffle curtains in the wet well at Pumphouse #1
- Installation of check and isolation valves in the raw water line at Pumphouse #1
- Conducted a geotechnical feasibility study on expanding the clear well at Pumphouse #2
- Replacement of approximately 250 meters annually with Automated Meter Reading (AMR) technology which will allow meters to be read without accessing private property
- Assessment of fire flow in the Central Distribution Zone: while reconnecting a 450 mm water main that crosses Spring Creek Mountain Village to a 200 mm water main on 4<sup>th</sup> Street, a previously unidentified water main was discovered which connects the distribution systems on 4<sup>th</sup> Street with those on 3<sup>rd</sup> Avenue. As a result of this fortuitous discovery, the 2013 portion of this fire flow project will no longer be required.



### DID YOU KNOW...

We submitted a capital plan for 2013 – 2017.





## DID YOU KNOW...

EPCOR has raised over \$4 million for the United Way since 1996.

## WHAT'S AHEAD ENVIRONMENT

We will continue our focus on watershed protection in the Bow River Valley. Upcoming activities for 2013-14 include: working with partners in the basin to develop and coordinate river water quality sampling programs; providing financial support for Alberta Environment's Bow River monitoring program; ongoing work on the Government of Alberta's Bow River Phosphorus Management Plan; as well, developing a source water protection plan in partnership with the Canmore community.

## CUSTOMER CARE & COMMUNITY

We are proud to support programs and organizations providing more of the essentials which enhance the quality of life in the communities we serve. EPCOR is a strong supporter of the United Way and has raised over \$4 million for the organization since our first fundraising campaign in 1996. We also recognize employees who volunteer in the community by providing a Helping Hands Grant to a charitable service organization that they recommend.

## SAFETY

Our commitment to staff and public welfare is supported by continuous safety training. The most significant activity in 2013 will see six staff attending a week-long Safety 2000 course at the Global Training Centre in Strathmore.

## QUALITY ASSURANCE

We will be developing a Drinking Water Safety Plan in cooperation with Alberta Environment, the Town of Canmore and EPCOR's environmental specialists. The plan will assess any potential risks to maintaining a good quality supply of drinking water and identify possible solutions, if needed.



## OPERATIONAL EXCELLENCE

All ten of our operators have at least Level 1 certification in four areas – water treatment and distribution and wastewater treatment and collection. We are continuing to cross train the operators so they have the work experience required to increase their certification levels.

## CAPITAL

Several capital projects are on the books for 2013 and the priority ones support the wastewater treatment plant upgrades and expansion. First Stantec Engineering will complete the design and costing of the solids removal portion of the upgrade project, with construction slated to begin in 2014. Also, two larger pumps and associated controls will be installed to better manage influent flows to the plant.



## DID YOU KNOW...

As a proactive measure, we will be developing a Drinking Water Safety Plan in consultation with the Canmore community.



# WATER AND WASTEWATER SYSTEMS IN CANMORE

## WATER TREATMENT

Our certified operators handle widely varying demands for water throughout the year, depending on the number of visitors to the community. Canmore has two water sources. Pumphouse #1 is fed via a groundwater source (two wells) that requires only chlorination to treat the raw water. It can meet a peak demand of 8 megalitres per day (ML/day). Meanwhile Pumphouse #2, which uses a surface water source treated with direct filtration, free chlorine and ultraviolet light disinfection, can meet a peak demand of 9 ML/day. In 2012, both sources supplied a combined average demand of approximately 6 ML/day.

## WATER DISTRIBUTION SYSTEM

Our crews operate and maintain more than 100 kilometres of water distribution pipes which supply treated water to all areas of town. In addition to providing water to the population of Canmore, bulk water is sold and distributed to the MD of Bighorn.

Repairing leaks in Canmore is an on-going challenge due to its geology. Water from leaking pipes quickly disappears into the granular soils, rather than surfacing where it can be easily detected.

Water loss in the system has dropped from over 30 per cent in 2002 to 23 per cent in 2012 due to leak detection and repairing system leaks. While an improvement, there is still work required to achieve the Town's 10 per cent goal, which is the utility industry standard.

## COLLECTION SYSTEM

The Town's sewage collection system is divided into 11 catchment areas that each flow via gravity to one of 11 lift stations. Approximately 150 homes, mostly in South Canmore, are serviced by a Low Pressure Sewage System rather than a gravity one. Each home is required to have a sump and grinder pump to transfer sewage from the house to the collection main in the street. It is important residents regularly inspect and maintain their pump and sump systems to prevent backflow into their homes.

Despite our diligent maintenance, the high groundwater levels in the downtown area can still lead to substantial infiltration of groundwater into the wastewater collection system. As a result, the additional volumes of wastewater requiring treatment add to the utility costs, energy consumption and associated greenhouse gas production.

## WASTEWATER TREATMENT

Canmore's Level III tertiary system is the premier level of wastewater treatment. The plant includes primary screening, biological aerated filtration for secondary and tertiary treatment, and UV disinfection. This process train ensures that the effluent returned back to the Bow River is of high quality.

The plant is currently designed to treat a peak demand of 22 ML/day. In 2012, the average daily influent flow was 8.36 ML/day with daily flows varying between 4.35 ML/day and 26.73 ML/day.

## STORM SEWER MANAGEMENT

The Town of Canmore has approximately 35 km of storm sewers. Most of these are located in the newer subdivisions. The older sections of Town do not have storm sewers due to the flat terrain on the valley. In these areas, storm water is collected via drywells which allow the storm runoff to percolate down into the ground and ultimately reach the water table.



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