



**STRATHMORE UTILITIES
PERFORMANCE REPORT
2004**



2004

Strathmore Utilities Performance Report



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INTRODUCTION

This 2004 Utilities Performance Report provides an overview of the successes and improvement opportunities within the Town of Strathmore utility system and also looks ahead at plans for 2005. Our key measures of success include a full range of activities, summarized under the headings of Quality and Efficiency, Customer Service and Community Involvement, Regulatory and Environment, Safety, and Capital and Rehabilitation Programs.

BACKGROUND

The Town of Strathmore's extensive twenty-year utility management agreement with EPCOR is one of the first of its kind in Canada encompassing water, wastewater, storm drainage and residential irrigation. The contract also includes management of the Capital and Rehabilitation program, as well as construction of a new state of the art tertiary wastewater treatment plant. The plant was put into operation in the summer of 2001. In 2002, planning was conducted to convert the process to a Sequencing Batch Reactor technology, which would increase the capacity of the plant for future years. The water treatment plant is in the process of being enhanced to improve water quality, emergency response and to exceed all environmental standards. The potable water distribution system is supplied by two (2) distribution reservoirs with a total volume of 9000 m³. The wastewater collection system consists of five (5) wastewater lift stations.

Water is supplied to the Town of Strathmore from the Western Irrigation District "A" canal. The water is drawn from the canal in the summer and stored in a million cubic meter raw water reservoir. This raw water reservoir is used during the winter months when the canal is shut down. The Class II surface water treatment plant, with a capacity of 6.5 ML/d, is an up-flow clarification plant, which includes coagulation, flocculation, clarification, filtration and free chlorine disinfection. The addition of copper sulphate to the raw water reservoir, potassium permanganate injection and a pumping level draw down strategy were adopted for taste and odour control.

The Town of Strathmore also has a separate residential irrigation system. This system pumps water directly from the Western Irrigation District canal and distributes the non-potable water through a shallow distribution system which is used for outdoor irrigation from June 1st to October 1st. The system uses four (4) pumping stations to supply the residential irrigation system with water.

The storm system includes two (2) lift stations and eight (8) outfalls that discharge to a series of storm water retention ponds. The storm water then flows via a watercourse to Eagle Lake, located approximately 4 kilometers southeast of Strathmore.

EPCOR Water Services has 100 years of experience providing a complete range of quality water and wastewater services. More than one million people across Western Canada rely on EPCOR for a safe, assured supply of water every day. EPCOR's high internal water quality standards are even



QUALITY AND EFFICIENCY

Quality and efficiency have been enhanced through diligent operations and high quality standards. All regulatory requirements have been met and or exceeded as required by Alberta Environment (AE).

HIGHLIGHTS

Water Treatment and Distribution

- Provided increased pressure in the Westmount distribution system. Pressure was tested prior to and increased gradually, until zone pressures were equalized.
- Established a rehabilitation project to prevent turbidity increases.
- Westmount Fire pump pressure reducing valve was tested by Field Services for proper setting. There was no adjustment left on the pilot control valve and a new valve was purchased. The valve was set to 75 psi using an air compressor and installed. When the fire pump was tested, 70 psi could not be obtained.
- Completed annual cleaning of the solids contact unit and recarb tank.
- Increased security through connection of the Water Treatment Plant entry alarm to EPCOR security auto phone call out.
- Initiated a small pilot study to test the effects of zeolite on local water. Results showed that the existing media outperformed zeolite.
- Performed maintenance on Clearwell pump #2 to improve operating reliability until the replacement of the well pump could be completed.
- Flow testing of Wildflower Estates and Hillview subdivisions was conducted at the request of the Town to investigate low pressure issue. Pressure was increased to 70 psi.
- Collected raw water samples to conduct algae counts for due diligence. Analysis showed the algae counts to be low.
- Purchased and installed a new modem to restore communication between the Brentwood Reservoir and the Water Treatment Plant. Communication was temporary lost between the two sites due to a faulty modem.
- Monitored reservoir levels during high usage in the summer season and consulted with the Town to implement water use rationing.
- Power lines at Brentwood Reservoir were damaged by a lightening strike. No electrical damage occurred to the reservoir equipment.
- The southeast end of the raw water reservoir berm eroded due to high winds in September. Higher water levels are being kept to provide adequate supply during the winter months when WID canal is not operating. Berm is scheduled for reconstruction in 2005.

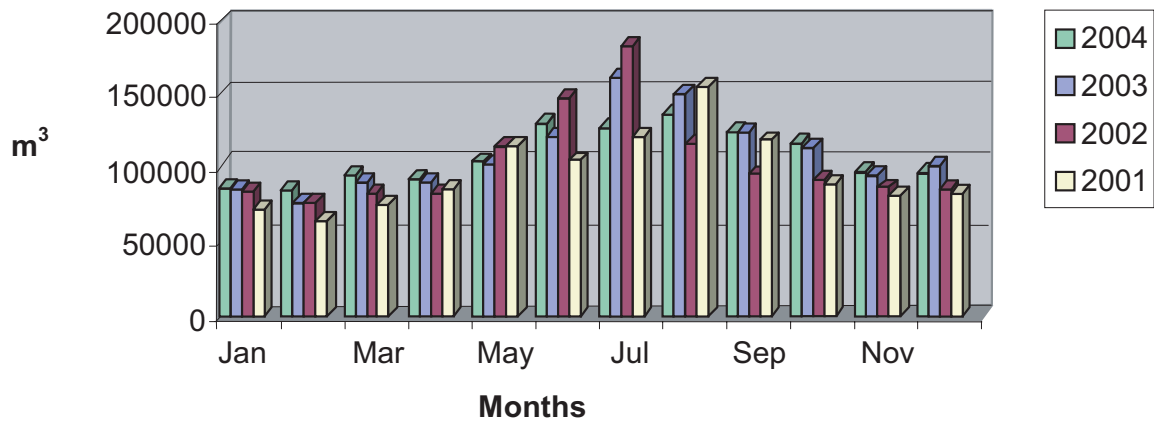
- Water samples were collected and tested for Haloacidic acid (HAA's). Tests were completed by the Rossdale Laboratory and met water parameters
- Repaired a water main that was struck by private contractor.
- Alberta Environment inspection of the water treatment facility was completed.
- A trial test of a new prominent free chlorine analyzer was carried out at the water treatment plant.
- Completed testing on chlorine room gas detectors; device is operating properly and call outs are working well.

Wastewater Treatment and Collection

- Moved alum injection point inside the pump discharge header to prevent freezing during very cold weather.
- Resolved issue of increased levels of red wastewater influent entering the Wastewater Treatment Plant.
- Completed calibration of D.O and pH meters.
- Alberta Environment inspection of the wastewater treatment plant was completed and AE submitted findings to the Town.
- Installed anti-siphon valves on alum pumps.
- Completed repairs to the Lockwood pivot. The guide wire broke during the winter, damaging some electrical components.
- Released effluent to the Freeman Marsh as part of ongoing project between Town, Ducks Unlimited and EPCOR.
- Pizometers at the Freeman Marsh project were pumped three times prior to samples being collected in May. Madawaska Consulting has been collecting samples for season start up of effluent discharge.
- The wastewater treatment plant experienced high flows throughout the year, which have affected the treatment process due to high loadings. An equalization tank will be built in 2005 to help with the higher flows.
- The Strathmore staff conducted 979 QA/QC tests at the wastewater laboratory and 631 QA/QC tests at the water treatment laboratory. Daily Wastewater testing was conducted at our EPCOR Lab in Canmore. Semi-annual treated water testing was conducted by our EPCOR lab in Edmonton.
- Treated wastewater discharge and downstream monitoring testing were contracted to Madawaska Consulting in 2004. EPCOR's laboratory, EPCOR's Watershed Coordinator and Madawaska Consulting reviewed the results and prepared a Downstream Water Quality study which was included in the yearend report submitted to Alberta Environment.

- The maintenance program includes maintenance activities and frequencies for inspecting, testing and/or servicing for emergency power generators and batteries, pumps, electrical panels, lift station, heating and ventilation systems, cranes and hoists, emergency lighting systems, fire alarm panels, fire extinguishers, pressure reducing valves, air relief valves, clarifiers, water filters, blowers, control and alarm systems, air compressors, disinfection systems, reservoirs, chemical feed systems, grounds maintenance, snow removal, vehicle maintenance, distribution system main lines and valves, collection system main lines, and manholes.
- All regulatory reports were submitted as required.
- Water main breaks were repaired within 24 hours, with the exception of one during the Christmas holidays which took 72 hours to repair. Seven waterline breaks, two main repairs and 3 curb stops were repaired in 2004. There were no power outages for more than 8 hours.

WWTP EFFLUENT VOLUMES 2001-2003



STRATHMORE WATER AND WASTEWATER

Year	Population	Water Consumption		Wastewater treated effluent discharge	
		Metered Water (m3)	Consumption l/p/d	Volume Released	Per Capita l/p/d
2000	7165	856,922	327	752,085	287
2001	7455	924,565	339	737,593	271
2002	8022	1,213,847	415	1,102,584	377
2003	8640	1,277,556	405	1,284,097	407*
2004	9115	1,320,417	397	1,130,637	340

*Note: 407 l/p/d was due to significant draw down of lagoons in late 2003

QUALITY AND EFFICIENCY

	2001	2002	2003	2004	Comments
Quality Assurance/Quality Control activities on site WTP WWTP	674	2,368	811	979 631	Effluent tests have been reduced since the improved QA/QC system was implemented.
Completion of scheduled maintenance activities	100%	100%	100%	100%	Complete.
Completion of reporting requirements – Contract – Regulatory	100% 100%	100% 100%	100% 100%	100% 100%	All reports completed.

STAFFING AND RESOURCES INDEX

Strathmore Staffing Levels	Actual 2001	Actual 2002	Actual 2003	Actual 2004
Full time permanent Employees	7	8	8	9
Part time/temporary staff	1	1	1	2
Additional EPCOR Staffing Resources	Actual 2001	Actual 2002	Actual 2003	Actual 2004
Safety	1 week	1 week	2 weeks	13 weeks
Quality Assurance / Quality Control	2 weeks	1 week	2 weeks	2 weeks
Preventative Maintenance (IT, SCADA, Electrical, Millwright)	13 weeks	12 weeks	12 weeks	20 weeks
Process expertise (professional tech support)	1 week	6 weeks	8 weeks	0 weeks
Environmental	2 weeks	4 weeks	2 weeks	2 weeks
Communications	4 weeks	4 weeks	4 weeks	4 weeks
Operations (Operator help from other sources)	30 weeks	20 weeks, 1 staff	6 weeks	0 weeks



CUSTOMER SERVICE AND COMMUNITY INVOLVEMENT

Staff is committed to providing 24 hour emergency service and is available to answer customer questions and resolve customer concerns in a timely manner.

EPCOR and their employees are active in the community through sponsorship contributions and donation of time.

HIGHLIGHTS

- In 2004 EPCOR initiated research within the Town, to measure the overall satisfaction with the water service supplier. Customers provided EPCOR with an overall rating of 89% satisfaction.
- Continued communications with customers on efficiency, quality and water or wastewater information.
- Sponsored a Christmas Season swim and skate.
- Participated in the Strathmore Heritage Days Parade.
- Continued sponsorship of Comedy Cares - International Street Performers fall visit to Strathmore Hospital.
- Sponsor of the World Professional Chuckwagon held during Strathmore Heritage Days.
- Partnered with the Fire Department to sponsor Canada Day Breakfast.
- Active participant in Strathmore Spring Festival.
- Participated in the Canal Clean-up and partnered with the WID as the lunch sponsor.
- Sponsorship of the PGA – Junior Golf Clinic. Hosting junior golfers to meet and learn from the pros.
- EPCOR's School Education program offered to Strathmore elementary schools.
- EPCOR partnered with Evergreen Theatre to provide elementary students with an educational presentation titled "Up the Creek".
- EPCOR Essential Volunteers Program - Helping Hands Grant.
- Proud sponsor of the 2004 Juno Awards.
- Proud sponsor of Western Canada Water and Wastewater "Water for People" initiatives.
- Sponsor of the Canadian Professional Rodeo Association.
- Sponsor of the "Gold Medal Plates" in Western Canada, hosting culinary competitions to raise funds for the Canadian Olympics Excellence Fund.

CUSTOMER SERVICE INDEX

Activity	2001	2002	2003	2004	Comments
Number of service outages	0	0	0	1	One break over the Christmas holidays that took 72 hours to repair.
Customer Satisfaction Research	0	1	0	1	Achieved 89% satisfaction.
Number of community activities	15	17	16	17	Listed under highlights





REGULATORY AND ENVIRONMENT

EPCOR is committed to ensuring that the Town of Strathmore meets or exceeds all regulatory and environmental requirements.

HIGHLIGHTS

- EPCOR’s accredited lab reviews the Strathmore monthly water and wastewater quality reports to ensure compliance with regulatory standards.

REGULATORY AND ENVIRONMENTAL INDEX					
Activity	2001	2002	2003	2004	Comments
Alberta Environment 'Approval to Operate' violations	4	11	9	12	Provisions are being made to drastically reduce the violations.
Environmental releases	0	0	0	1	Pivot - mechanical problem
Training activities (hrs per person)	3	4	19	27	



SAFETY

Safety standards have been incorporated into all activities undertaken by EPCOR within the Town of Strathmore.

HIGHLIGHTS

- Use a Safety Performance Index (SPI) to track safety and environmental activities. EPCOR targets were met in 2004.
- No Lost Time incidents in 2004.
- Held regular safety meetings to allow staff to be updated on safety issues.
- Preventive talks, site inspections and safe work plans are tools incorporated into regular work activities to encourage and promote safe work practices.
- All required safety training conducted in 2004 with additional safety equipment purchased to ensure safe work practices are continued.

SAFETY INDEX					
Activity	2001	2002	2003	2004	Comments
Preventative activities (talks, inspections, work plans)	48	57	77	94	Safe work plans, vehicle inspections, fire extinguisher inspections, observations, manager and worksite inspections
Safety Meetings	12	12	9	9	Met targets
Lost time incidents	0	1	0	0	

EPCOR is committed to a safe and healthy environment, which is demonstrated through our work practices. We have a long and successful history of safety management and a record that is above the industry average in Alberta. We monitor the effectiveness of our health and safety management system and implement changes to continually improve our performance.

CAPITAL AND REHABILITATION PROGRAM

The Town of Strathmore and EPCOR work cooperatively to establish an annual capital infrastructure program. EPCOR uses their expertise to determine priorities and maximizing existing infrastructure.

HIGHLIGHTS

- Capital and Rehabilitation Budgets for 2005 were submitted as per contract.
- Wetland Involvement – A total of 89,299 m³ of tertiary treated water was delivered to the Freeman Marsh in 2004.
- Communication System Phase I – this project involves installation of radio transmission data links between the wastewater treatment plant, Water Treatment plant and the sanitary lift stations, this will be accomplished in two phases. Phase II is scheduled for 2005.

Distribution System

- Brentwood Line Cathodic Protection – Cathodic protection was added to the line from the water plant to the Brentwood reservoir to maintain the integrity of the line.
- Brentwood Pumping station water flow meter – replacement of a strap-on style with a more accurate meter to improve tracking of water usage.

Water Treatment Plant

- Water Treatment Plant Air Conditioning – installation of environmental controls at the plant will ensure computer operating temperatures are not exceeded.
- Water Treatment Plant Raw Water Pump #1 was replaced as the service life of the existing pump has expired.
- Water Treatment Plant Emergency Pumping Station – this is for cases of extreme demand or failure of the Raw Water pumps.
- Water Treatment Raw Water Pump house upgrades – environmental controls and noise dampening devices were installed to decrease the noise levels produced by the air blower and eliminate the high room temperatures, which could affect the operation of the pumps located inside the building.
- Water Treatment Plant Clearwell Pump – this pump was replaced as its service life and reliability were in question.
- Water Treatment Plant Alum sludge handling – this project involved the removal of sludge accumulations within the two sludge lagoons located at the plant site.
- Water Treatment Plant Effluent Turbidity Meter – turbidity meters were installed for better process control of the chemicals and treatment.

Wastewater Treatment Plant

- Wastewater Treatment Plant Balancing Lagoon/Tank – this was created from the rehabilitation of the old anaerobic cells to form a new lagoon capable of handling high flows and excessive BOD loadings. The extra flows or loading are “shaved off” and temporarily stored in the lagoon and then returned for treatment during low flows.

Residential Irrigation

- RI System – replacement of one pump at the Parkwood pumping station and one pump at Brentwood pumping station was required to ensure reliability in the system. Also installed 5 additional blowouts for winterization of the system





LOOKING TO THE FUTURE – *A Goal-Driven Partnership*

We look forward to continuing to share and grow with the Town of Strathmore through our continued partnership. Our plans include:

QUALITY AND EFFICIENCY

- Water quality improvements.
 - Provide 5 year capital budget requirements for the water treatment plant.
 - Provided the Town with updated 5 year capital plan.
 - Increase the reliability of the SCADA system by monitoring more of the infrastructure and alarm monitoring 24 hours per day with Edmonton staff monitoring as a back up.
- Increasing the operations certification levels above that required by Alberta Environment.
- Enhanced training to comply with Alberta Environment certification program.
- Implementation and use of a computerized Maintenance Management System.
- Work with the Town to reduce water consumption.

CUSTOMER SERVICE AND COMMUNITY INVOLVEMENT

- Continued community sponsorships.
- Continued school education program.

REGULATORY AND ENVIRONMENT

- Update of the Emergency Response Plan.
- Watershed management participant.
- Progressively work with the Town for the removal of wastewater effluent to the Bow River Basin.
- Continued Wetland Involvement - Freeman Marsh.
- Provide expertise to ensure good quality effluent that meets Alberta Environment regulatory requirements.

SAFETY

- Continued commitment to EPCOR's Safety program.
- Enhanced training to comply with Occupational Health and Safety regulations.



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