Town of Okotoks

Water Conservation, Efficiency and Productivity Plan

2014

Okotoks

Historic Past, Sustainable Future

EXECUTIVE SUMMARY

The Town of Okotoks Water Conservation, Efficiency and Productivity (CEP) Plan is an updated, Alberta Urban Municipalities Association (AUMA) aligned, iteration of the past Town of Okotoks Water Management Plan (2002 – 2011). Under the AUMA Water Conservation, Efficiency and Productivity Plan, the following are defined:

- Water conservation: Any beneficial reduction in water use, loss, or waste. Water management practices that improve the use of water resources to benefit people or the environment.
- Water efficiency: Accomplishment of a function, task, process, or result with the minimal amount of water feasible. An indicator of the relationship between the amount of water needed for a particular purpose and the quantity of water used or diverted.
- Water productivity: the amount of water that is required to produce a unit of any good, service, or societal value.

Through the CEP Plan the Town of Okotoks defines specific “supply-side and demand-management” tools” which will assist the community in managing its waterworks infrastructure, from source to end-use, in a sustainable manner. The five “supply-side and demand-management” tools” are:

- Regulatory Tools
- Financial Tools
- Utility Infrastructure and Operation Tools
- Education & Outreach
- Partnerships & Collaborations

The intent of water conservation and efficiency tools is to reduce annual average and peak (month, daily, hourly) water demand and consumption. The resulting benefits of the CEP will include but not be limited to: extending the useful life of our current waterworks infrastructure, deferring the need for constructing new works, achieving savings in capital and operating costs, maintaining and improving on the environmental state of our watershed and lastly preserving our irreplaceable and invaluable water source for future generations.

The CEP Plan must take into account the varying needs of the community and adapt to Okotoks’ evolving water supply. The Town must effectively manage our community’s water consumption under the short-term and long-term water supply options.

The Town of Okotoks is a leader in sustainable water management, achieving one of the lowest per capita gross water consumption rates in North America. By way of the tools defined within the CEP Plan, the Town of Okotoks aims to continue to be a leader in this realm, with a 2014 goal to maintain community water consumption at less than 285 litres per capita per day (lpcd) and achieve a target of 275 lpcd or less by 2017.

A. INTRODUCTION

HISTORY

For the past fifteen years under the guidance of the Town of Okotoks 1998 “Legacy Plan” and the subsequent Water Management Plan implemented in 2002, Okotoks Town Council diligently pursued a sufficient water supply through many strategies in order to accommodate a build out population of 25,000 - 30,000 people.

Reducing per capita water consumption at the same time as acquiring additional water supplies to accommodate growth (under a limited municipal growth model) was essential to ensuring the sustainability of the community under the Legacy Plan. The success of water conservation initiatives to date has resulted in the Town of Okotoks having one of the lowest per capita water consumption rates in Canada and North America. Over the past decade, Okotoks has experienced rapid population growth while reducing it gross municipal water consumption. During the period between 2002 and 2012, the Town’s population doubled while at the same time reduced per capita water consumption by an impressive 33 percent (Appendix A). The Town has managed population growth through the comprehensive and holistic strategies of its Water Management Plan.

In September 2013, due to increased population and growth pressures in the region, Town Council approved a shift in Okotoks future growth direction and adopted a proposed 60 year continued growth model as compared to the past “limited growth model” of the Legacy Plan. With the change in community direction, the need to pursue a long term water solution in order to accommodate growth was renewed. Alternatives for acquiring additional water to support a population beyond 30,000 people were limited and in November 2013, Town Council decided to pursue the development of a regional water system via the City of Calgary to meet future growth needs.

With the Town’s recently acquired water licenses (2013) and municipal gross per capita consumption of less than 285 liters per capita per day, Okotoks will achieve sufficient water supply for a population of 29,918 people. With the development of a regional water pipeline being a multiyear process, an interim water supply solution is required. The Town’s immediate preferred short term solution for growth beyond a population of 30,000 is temporary downstream water license transfers until Okotoks’ long term water supply solution is realized.

PURPOSE AND SCOPE

Comprehensive management of a municipality's water supply is fundamental to the sustainability and resiliency of a community. While the implementation of the regional water pipeline provides the Town of Okotoks with a secure long term supplementary potable water supply, it is essential that Okotoks continues to manage all of its water sources in an environmentally, ethically and fiscally responsible way.

The increasing awareness of citizens about the importance of water resources has focused much attention on municipal leaders to ensure that appropriate plans and actions are developed and implemented to meet short-term and long-term water resource needs while balancing the social, economic and environmental demands of the community.

The overall goal of the Town of Okotoks Water Conservation, Efficiency and Productivity (CEP) Plan (renewed Water Management Plan), is to ensure the provision of quality potable water, through a reliable waterworks utility to our growing municipality while maintaining and improving the health of our local aquatic ecosystem. To accommodate Okotoks' long-term community growth needs, water conservation, efficiency and productivity planning is more critical than ever.

Water conservation and efficiency planning refers to the identification, implementation, and evaluation of actions intended to manage water demand, reduce consumption and improve the efficiency of water use. This plan contains a series of tools and strategies to help ensure the effective and efficient collection, treatment, distribution and sustainable end-use (productivity) of the Town's potable water supply.

Through partnerships and collaborations with the Provincial Government, surrounding municipalities and the local development and building industry, the Town of Okotoks is committed to pursuing the most innovative water conservation and efficiency tools, practices and programs available. Through the successful implementation and ongoing evaluation of the Water CEP Plan, it is envisioned that Okotoks can continue to grow and prosper, while maintaining ecological balance with the local environment and regional water resources.

TARGETS

The short-term targets of the CEP Plan are:

- Maintain a community wide gross water consumption target of 285 litres per capita per day or less (note: targets are achieved and updated when the target is reached on average for a minimum of three years to ensure annual seasonal variability is allowed for)
- Achieve a community wide gross water consumption target of 275 lpcd or less by 2017
- Develop a residential per capita per day consumption target for 2015
- Strive to continuously reduce our gross water consumption rate while increasing in population
- Provide Council with an annual update of the progress of the Plan's implementation strategies
- Achieve a waterworks leak rate of 5% or less
- Reduce rate for energy consumed per mega litre of drinking water supplied

CURRENT CHALLENGES

Environmental: ➢ drought, flooding, water quality and quantity (in-flow stream flows)	
Strengths	• raw water quality • quality of treated effluent • quantity of treated effluent returned to Sheep River
Weaknesses	• absence of storm outfall treatment (direct discharge to river) in older sections of Town • effluent water temperature (higher temperatures pose risk to aquatic habitat) • natural in-stream flow of Sheep River is low (therefore higher level of effluent treatment is required)
Opportunities	• return flow compensation (Average 80% of treated effluent is returned to river) • through long-term water strategies (City of Calgary water supply), enhance aquatic environment of Sheep and Highwood Rivers (increased water volume downstream of Wastewater Treatment Plant)
Threats	• drought conditions and reduced in-stream flows in the Sheep River • climate change leading to drought and flood conditions • floods resulting in loss of waterworks infrastructure(supply wells), banks, vegetation (riparian zones) and municipal wide infrastructure
Economical / Financial: ➢ funding, capital projects, budget	
Strengths	• 100% self-funded utility • consumption based utility rate system (block rate structure) • 100% universal metering • competitive utility rates within the region
Weaknesses	• reliance on a contract operator (in-house not practical for the Town at this time) • potentially a single source supply for 50% of the community's water (regional water supply from City of Calgary) resulting in less autonomy over future rates
Opportunities	• there is flexibility in utility rate structure to accommodate future growth • Potable water and/or wastewater servicing could potentially be provided to regional communities through a regional water system
Threats	• consumption driven utility rate system: risk of low water consumption to potentially be of financial detriment, resulting in the loss revenue needed for the operation and management of the waterworks utility • unknown rates for City of Calgary regional water supply with little control over future rates • replacement costs for potential future regional water supply infrastructure

Societal: ➢ growth, education, consumer receptivity	
Strengths	• strong community participation in annual Water Consumption Rebate Programs • community support of Water Bylaw (i.e. outdoor watering schedule) resulting in self-policing • Conservation Educators Program • community consultation
Weaknesses	• continued disinterest in water conservation and productivity by high-end consumers • gap in communications with commercial, industrial and multi-family development property operators (non-responsive to Town)
Opportunities	• expansion of Water Conservation Rebate Program • explore potential to increase upper tier of the utility block rate structure as a further disincentive to high residential water consumers, and / or implement higher commercial rates
Threats	• water conservation education and initiatives could potentially reach 'saturation' levels within the community
Political: ➢ Provincial Water Act, funding sources, watershed/land use management	
Strengths	• Okotoks Town Council has the leadership and will to be leaders in water conservation, efficiency and productivity
Weaknesses	• municipal water sources are governed by federal and provincial legislation • environmental impacts such as droughts, floods, pollution control, responsible management of aquatic ecosystems, protection of groundwater supplies, quality of sewage treatment, regional growth and development directly affect municipalities however are not governed by municipalities • land use planning upstream of Okotoks – no control or knowledge of approvals • increased population results in a lower percentage of project cost covered by grant funding (populations of 45,000 or greater results in 15% funding)
Opportunities	• progressive provincial leadership could result in innovative watershed management and sub-regional water supply solutions
Threats	• potential elimination or reduction of future funding sources • fluctuating guidelines and regulations • changing provincial expectations and requirements

Regulatory: ➢ license transfers, in-stream objectives, government legislation, codes, laws	
Strengths	• exceed all current and anticipated provincial regulatory requirements and guidelines within Town waterworks utility
Weaknesses	• in-stream objectives: licensed withdrawals approved after 1995 or junior water licenses must meet the withdrawal conditions during period of low flows in the Sheep River • water license transfer system: limited supply of licenses available and a market place that is non-active and skeptical of the 'water market' • guidance from the provincial or federal governments on water efficiency strategies • inequity amongst current water license holders • Lack of available water licenses available for purchase or transfer
Opportunities	• potential provincial leadership in innovative water supply options such as: o return flow to source as 'value added credits' in maintaining the aquatic health of an aquatic ecosystem o aquifer storage and recharge o off stream storage solutions o movement of treated effluent upstream of municipality's water supply
Threats	• more stringent changes in regulatory requirements • no change or evolution of antiquated water regulations (provincial and federal)
Operational: ➢ waterworks infrastructure	
Strengths	• advanced waterworks monitoring and leak detection system • 100% ownership of waterworks infrastructure including future water pipeline • Supplemented water supply from Bow River; continued utilization of Sheep River water source therefore better security of water supply • long-term operation and maintenance contract with EPCOR Water Services Inc. • relatively new waterworks infrastructure
Weaknesses	• growth could result in increased water consumption (water consumption during neighbourhood construction process) • challenge meeting peak demand during hot spells and dry conditions • large quantity of potable water is used for non-potable water uses such as irrigation in the summer months
Opportunities	• utilization of non-potable water sources for future growth and non-potable water uses (irrigation)
Threats	• regional water supply; water quantity, quality and cost of potable water supply is beyond our control

B. WATER CONSERVATION AND EFFICIENCY TOOLS

Conservation, efficiency and productivity strategies are categorized into five supply-side and demand management tools aimed at influencing water use and reducing consumption and loss from source. These include:

1) Regulatory Tools
2) Financial Tools
3) Structural and Operational Tools
4) Education and Outreach
5) Partnerships and Collaborations

The tools in this Plan and associated goals and strategies are intended to guide the effective and efficient operation of the Town's waterworks utility and to continue with public outreach and education activities aimed at all water-users (not just the residential sector) to create awareness and promote water conservation and efficiency practices. It is imperative that strategies are consistently measured, reviewed, updated and improved to ensure the delivery of effective and innovative activities, programs and services.

1. REGULATORY TOOLS

Regulatory tools available to municipalities typically consist of bylaws and permits. These can be used to reduce institutional, legal or economic barriers to water conservation, or alternatively to establish barriers again unnecessary water use. For the most part, the regulatory approach requires little financial outlay and is a highly effective tool that allows municipalities to influence demand-side management (AUMA Water Conservation and Efficiency Handbook).

The Town of Okotoks utilizes regulatory tools to encourage water conservation and productivity (consumer end-use.) These tools include municipal bylaws, permit requirements and development agreements. Efficient consumer end-use is vital to a community's water management planning as the savings in water from conservation alone can be substantial and greatly contribute to a community's overall daily water allocation.

The majority of the regulatory requirements are embedded within the Town's Water Bylaw. The Water Bylaw establishes outdoor water use restrictions and mandatory indoor and outdoor water conservation measures. It is imperative that the measures required within the Bylaw are achievable for its citizens in practice, availability (market mainstream) and affordability. The Water Bylaw and its reiterations have achieved drastic reductions in overall community wide water consumption.

The Town utilizes conservation based development agreements/conditions to pilot pioneering water conservation initiatives. In partnership with local developers and the local building industry, unique water conservation programs are created, implemented and tested (i.e. Town of Okotoks Development Density for Water Conservation Program (2005). The resulting programs are both beneficial to the Town (increased water savings) and the Developer (financial benefit). Moving forward, it is imperative that the Town continues to research advanced water conservation measures, both for retrofits and new developments (whether required or incented), in partnership with the local development and building industry.

BYLAWS & REQUIREMENTS

Town of Okotoks Water Bylaw (Bylaw 19-09 and Bylaw 22-11)

Outdoor Water Use Restrictions (Bylaw 19-09 Section 3.71)	
Within the Town of Okotoks, outdoor water use restrictions are implemented annually between May 1 and October 31. The restrictions consist of two assigned watering days a week (based on odd and even addresses) per utility customer (residential, commercial, institutional and industrial). On these days between the hours of 6am-9am and 7pm-11pm, utility customers may utilize sprinklers or irrigation systems. Large irrigation users are assigned a block watering time by the Town (i.e. schools with sports fields, Town owned parks, and large commercial properties). Utility customers may at any time, hand water with a watering container or a hose with a trigger spray nozzle. If further reduced outdoor water conservation is required due to compounded circumstances (i.e. excessive drought and/or reduce river flow), the Municipal Manager may declare additional outdoor water use restrictions.	***Progress:*** *Continue to promote, educate, monitor and enforce Outdoor Water Use Restrictions (specifically with new residents).*

		Requirement for Indoor Water Conservation Measures (Bylaw 22-11)	
		The Town first included the requirement for indoor water conservation measures (low-flow plumbing fixtures) into the Water Bylaw in 2002 (Bylaw 16-02). These requirements have been updated over the years evolving with technology and market availability. As of November 2011, all new residential, commercial and institutional construction and renovation project requiring a plumbing permit must meet the following water conservation measures as specified in Appendix A of Bylaw 22-11. • High-Efficiency Toilet (WaterSense® Certified or equivalent) • High-Efficiency Urinal (WaterSense® Certified or equivalent) • Low Flow Showerhead (WaterSense® Certified or equivalent) • High-Efficiency Faucets (WaterSense® Certified or equivalent) • Water Conserving Dishwasher and Clothes Washer (EnergyStar® Certified) • Hot water pipes in new residential construction must be fully insulated and be limited to 11m or less from hot water heater to any bathroom; for runs longer than 11m a recirculation system is mandatory.	***Progress:*** *Continue to promote, educate, monitor and enforce.* *Undertake a 2014 Residential Water Consumption Analysis to evaluate impact of the implementation of Bylaw 22-11.*
		Proposed municipal prohibition of garburators in new residential construction and renovation. To be required in plumbing permit process.	***Progress:*** *Research potential of each initiative in 2014.* *Research and potential stakeholder engagement may result in future amendment to Water Bylaw.*
		Low flow furnace humidifiers: requirement for all humidifiers in new construction be low-flow and consume less than 10L of water per day to drain.	
		Research water consumption rates of water softeners and water consumption requirements.	
		Requirement for Outdoor Water Conservation Measures	
		Proposed addition of irrigation requirements to Water Bylaw for new irrigation systems. All new irrigation systems are to be equipped with a rainfall sensor to the satisfaction of the Town.	***Progress:*** *Research and potential stakeholder engagement may result in future amendment to Water Bylaw.*

Town of Okotoks Residential Grading Bylaw (Bylaw 15-12)

Water Conservation Measures within Bylaw 15-12: Minimum top soil depth requirement (12" average uniform depth) in landscape areas for new residential property construction. Measure promotes water conservation through increased soil water retention and reduced water run-off. Definition of topsoil quality, ensuring soil implemented is high in organic matter supporting increased levels of water retention and vigorous plant growth. Requirement for a minimum of 80% of a parcel to be landscaped within 12 calendar months after the required topsoil is placed. This measure prevents the long term loss of topsoil through storm run-off.	***Progress:*** *Process issues experienced with original Grading Bylaw 21-10. Stakeholders were consulted in 2011 and 2012. Process was updated and Bylaw 16-10 was repealed with the approval of Bylaw 15-12.* *New application and inspection process ran smoothly through the summer of 2013. No issues expected in the summer of 2014.*

Town of Okotoks Commercial, Industrial and Institutional Grading Requirements

Proposed development and implementation of a Grading Bylaw with similar water conservation measures (specifically top soil depth and quality) as Bylaw15-12 that applies to commercial, industrial and institutional parcels.	***Progress:*** *Proposed development of Bylaw to occur in 2014.*

Town of Okotoks Storm Drainage Bylaw (Bylaw 18-13)

Water Quality Measures within Bylaw 18-13: Prohibition of the following materials from being released into the storm drainage system and adversely impacting the water quality, flora and fauna of the Sheep River: • Soil, sediment, waste or other solid matter • Fecal matter and animal waste • Cooking oils and grease • Gasoline, motor oil, transmission fluid an antifreeze • Solvent and paint • Cement, concrete wastes and construction material • Yard waste, pesticides, herbicides and fertilizers • Biomedical waste • Industrial waste • Soap and detergents • Water from hot tubes • Fish and other aquatic fauna and flora not authorized by the Town.	***Progress:*** *Bylaw approved by Council on September 9, 2013.* *Progress of the implementation and administration of Bylaw to be monitored throughout 2014.*

Large Consumers: Requirement for Annual Water Budget	
Proposed requirement for large commercial, institutional and industrial customers consuming high volumes of water per day to prepare and implement a Water Conservation Plan or implement a Water Consumption Budget that provides monthly water data indentifying the appropriate water consumption for their needs.	***Progress:*** *Research in 2014.* *Research and stakeholder engagement may result in future requirements.*
Town of Okotoks Wetlands Policy	
Proposed development of a Town Wetlands Policy. As stated within the Alberta Wetland Policy, wetlands play an important role in sustaining healthy watersheds by protecting water quality, providing water storage and infiltration, providing habitat for wildlife, fish and plants, and sustaining biodiversity. Wetlands; • provide flood mitigation by storing and slowing releasing large volumes of runoff; • function as natural filtration systems, cleansing surface waters prior to discharge, and; • act as groundwater recharge zones, conduits between surficial water sources and aquifers below ground.	***Progress:*** *Research and development of Bylaw or Policy with stakeholder engagement in 2015 onwards.* *In addition, awaiting Government of Alberta policy direction.*

TOWN OF OKOTOKS DESIGN AND CONSTRUCTION SPECIFICATIONS
(Required for Development Permits and Subdivision Plans)

Water Conservation Requirements	
Xeriscaping: In all landscaping projects, the seven principles of xeriscaping are to be considered and applied: planning, top soil, vegetation selection, mulch, turf areas, water, and maintenance. • Minimum 40% percent of required landscape area, to be vegetated (can consist of a mix of turf, perennials, and shrubs). Any industrial and business sites with turf areas are to use more drought tolerant turf species. • Gravel mulch to be installed at same depth as organic mulch (75mm), and all landscaped areas including those under non vegetated areas are to still have a minimum depth of 300mm of topsoil. The following are defined: • Top soil depth (for turf areas, trees and planting beds) • Grass seed (including drought tolerant requirements) • Mulch depth and quality (for planting beds) • Natural or environmentally sensitive areas to be replanted with locally native species and original topsoil.	***Progress:*** *Specifications are reviewed and updated annually.*

Irrigation Requirements for Non-Residential Sites	
Addition of the following non-residential irrigation requirements to Town Design and Construction Specifications. Irrigation systems using the Town's potable water supply are no longer acceptable in new development and development permits. Water trucks and water from hose bibs for initial plant establishment will be permitted. The following exceptions apply: • Sportsfields (mandatory irrigation with head to head coverage) • Quick coupler systems for establishment of caliper size stock. • Temporary above ground irrigation for plant material establishment (must be in compliance with Town Water Schedule) • School sites Developers are encouraged to design non-irrigated sites (utilizing drought tolerant groundcover, trees and shrubs) or use rain water harvesting for irrigation. Irrigation systems using rain water harvesting must be in compliance with any and all applicable codes and regulations. For sites that meet the requirements for irrigation, irrigation plans must the requirements of the Town of Okotoks General Design and Construction Specifications.	***Progress:*** *Irrigation requirements went through developer stakeholder engagement in 2013 and were positively received.*

CONSERVATION BASED DEVELOPMENT AGREEMENTS / CONDITIONS

Density Bonus Program	
Water Conservation Restrictive Covenant (WCRC): This Program was originally initiated in 2005 in partnership with United Communities and Tristar Communities for the first stages of Drake Landing, Crystalridge and Cimarron. Indoor and outdoor water conservation measures were registered to each parcel through a restrictive covenant. At the time, the water conservation measures were pioneering and far above the standards of other residential homes in Okotoks under the "Low Flow Plumbing Fixtures" requirement of Bylaw 16-02 (August 2002). The results of the 2007-2010 Residential Water Consumption Analysis indicated: • The average reduction in indoor water consumption, due to the low-flow plumbing fixtures requirement of Bylaw 16-02, was 9.1%. • Homes that met the requirements of the Development Density Program achieved an additional reduction of 17.8%. The implementation of Bylaw 22-11 (November 2011) and its requirement for Indoor Water Conservation Measures supersedes the requirements of the Water Conservation Restrictive Covenant (WCRC).	***Progress:*** *As of December 2011, the Density Bonus Program is no longer available to developers.* *An iteration of this Program may be created in the future depending on the density targets of the future Municipal Development Plan.*

	Water Conservation Requirements for Development Amendments	

	Continue to research advanced residential, institutional and commercial water conservation measures in partnership with local development and building industry.
	
	Potential development agreements may be based on water conservation measures that go above and beyond that of the Water Bylaw and mainstream market measures. Each development agreement to be customized between the Town and the developer for the particular development.
	
	Current progressive water conservation measures to be considered for future residential and non-residential developments:
	• Rainwater Harvesting for irrigation and/or toilet consumption (provincial consultation/approval required)
	• Grey Water Reuse for irrigation and/or toilet consumption (engineer and provincial consultation/approval required)
	• Xeriscaped front yards (landscape completed in residential areas by Developer)
	• Drought tolerant grass (seed and/or sod) to be implemented if turf areas are desired
	• Environmental Construction Operations (ECO) Plan
	• Master Drainage Plan for new neighbourhood development
	• Tree Caliper (requesting small calipers to reduce water consumption for establishment)
	• Sustainable Site Initiative for new neighbourhood development :
	  ○ Soil Conservation Plan for new neighbourhood development
	  ○ Staged Development Plan for new neighbourhood development
		Progress:
		Research and potentially develop specific program in partnership with local developer.
		
		Water reuse projects would need to be developed in partnership with Alberta Municipal Affairs and Alberta Environment and Sustainable Resource Development.
		
		Potential funding opportunities for residential water conservation projects through the FCM Green Fund.

2. FINANCIAL TOOLS

Financial tools include both incentives and disincentives to reward conservation and to penalize overconsumption of water. Such tools are typically used to convey the message that water is valuable and can assist in motivating users to reduce water (AUMA Water Conservation and Efficiency Handbook).

In 2003, the Town developed a utility rate restructuring strategy for a consumption driven block rate system. This strategy was to ensure and maintain revenue stabilization over the long term operation of the waterworks utility while encouraging water conservation and efficiency. A three tier rate structure was implemented for residential water customers whereby residents using less than average amounts of water pay less and excessive consumers pay more. Okotoks has correlated wastewater charges to water use with the rate structure applying to metered potable water and sewer generation. The largest risk of a consumption driven utility rate system is the potential for low water consumption to be a financial detriment, resulting in the loss revenue needed for the operation and management of the waterworks utility. The Town implemented the strategy with a 60% consumption rate and a 40% flat rate which over time has evolved to the current 80% consumption and 20% flat rate.

Commercial, industrial and institutional utility customers are not charged on the three tier rate structure as their consumption patterns vary greatly in volume and end use. The commercial rate is set at approximately mid range of the residential three tier structure.

To further incent Town utility customers towards greater end-use water productivity, the Town has utilized a Water Consumption Rebate Program. The Program provides a utility bill rebate to residential customers who purchase Town selected water conservation products (i.e. mulch, toilets, rain barrels). The Program has operated annually since its inception in 2008 and proven popular with residents. The water conserving products that are eligible for the Program change periodically, as over time, through industry improvements, consumer expectations and reduced prices, many items penetrate the market and become standard. These incentives are best targeted to customers who would unlikely take action in the absence of the incentive or would have chosen a less water-wise purchase without the incentive. With the success within the residential sector, the Town should consider expanding the Program to include appropriate rebates for commercial, industrial and institutional customers.

CONSERVATION-ORIENTED PRICING AND RATE STRUCTURE

Universal Metering	
Okotoks universal metering program is essential in reducing water demand and for the adoption of our consumption driven utility rate system. The Town has been 100% metered for the past 25 years. Advances in technology provide for automated "smart meter" readings which allow meters to be read from a central location enabling closer monitoring of water consumption. Currently Okotoks water meters are read through a variety of means (automated, remotely or manually) depending on the age of the meter.	***Progress:*** *Potential for future community wide automated reading system.*
Town of Okotoks Consumption Based Residential Utility Rate System	
The Town of Okotoks utilizes a consumption based utility rate system that maintains revenue stabilization over the long-term operation of the waterworks utility while encouraging water conservation and efficiency. At present, the dollars required to be raised from rates to cover expenses of operating the water utility are recovered 80% from the consumption rate and 20% from a fixed rate. The block rate structure is designed to incent conservation, whereby residents using less than average amounts of water will pay less and those with higher than average water use will pay a premium rate for above average consumption. There is a residential exemption from sewer generation charges during the months of June to October for summer irrigation use. During these months a household's average winter sewer generation (December to April) is applied to the utility bill. As of January 2009, the utility bill calculation has consisted of an 80% consumption based rate (metered potable water and sewer generation) and a 20% flat service rate for all residential and commercial customers. Current (2014) residential block rates are: • $1.35 for the first 23 cubic meters (33% of utility customers) ; • $1.65 for 23 to 68 cubic meters (61% of utility customers); • $1.84 for excess of 68 cubic meters (6% of utility customers). • $6.57 Fixed rate per month – All customers Since the Plan's inception, the long-term goal was to slowly increase the consumption rate and decrease the flat service rate, encouraging further water conservation. The original split was a 60% consumption rate and a 40% flat rate (2003-2005). In 2006, the ratio was changed to 70/30% and in 2009 was increased to the 80/20%. The Plan had targeted an eventual ratio of 90/10%. With the continuous drop in residential water consumption (under 300 liters per capita per day), an increase in the consumption based rate may be financially unsustainable.	***Progress:*** *With the community's low water consumption, currently Administration recommends the Town must at minimum maintain a 20% flat service rate to ensure long-term utility maintenance and operational revenues to cover fixed costs.*

Bulk Water Rate	
Okotoks Bulk water rate is set to be competitive with other bulk water facilities while promoting water productivity. Okotoks bulk water is primarily consumed by Okotoks based commercial and industrial customers, Town operations and individual MD residents residing in the local area.	***Progress:*** *Consumption and rate monitored and reviewed annually.* *Rate is set periodically as determined by the Municipal Manager.*

WATER CONSERVATION REBATE PROGRAMS

Residential Water Conservation Rebate Program	
The Town implemented this Program in 2008, in partnership with Climate Change Central, to incent and reward residential homeowners for making purchases that contribute towards water efficiency and conservation. The Program has included the following items since its inception: • Low-flow toilets (WaterSense® certified) (2008, 2009, 2012, 2013) • Clothes washers (EnergyStar® certified) (2008, 2009, 2013) • Dishwashers (EnergyStar® certified) (2008, 2009) • Rainbarrels (2010 – 2013) • Mulch (organic and inorganic) (2010-2013) • 'Smart' irrigation controllers (2010-2013) • Drought tolerant groundcover / turf (2010-2013) This Program has been very successful and popular since its implementation. In 2013 the Program funding increased from $25,000 (2012) to $50,000 which proved to be a tremendous success, resulting in a record-setting total of 430 household participants purchasing 680 water conservation items. While the Program has remained very popular over the years, it is foreseeable that some level of saturation will occur in the future. Water conservation items for consideration in future Programs: • high-efficiency Energy Star® dish-washers (replacement only) • low-flow shower heads (replacement only) • low-flow faucets (replacement only) • compost and/or manure • topsoil • on-demand hot water heaters • plumbing fixtures repairs	***Progress:*** *Future rebate items to be research and potentially implemented.* *All rebate items must take into account incenting change and water wise purchasing.*

Non-Residential Water Conservation Rebate Programs	
Expansion of the Water Conservation Rebate Program to include rebates for commercial, industrial and institutional customers. Potential rebates to include: • Low-flow toilets (WaterSense® certified) (2008, 2009, 2012, 2013) • Mulch (organic and inorganic) (2010-2013) • 'Smart' irrigation controllers (2010-2013) • Drought tolerant groundcover / turf (2010-2013) • Low-flow faucets (replacement only) Proposed development of a "Pre-Rinse Spray Valve Replacement Program" geared towards the food and restaurant industry. The Region of Waterloo conducted a Pilot Study and determined that new, high-efficiency spray-valves ($60 retail value) can reduce water consumption by 245 liters per day, per valve. This equated to $300 savings for each customer, per valve, per year, from both reduced water and associated energy consumption.	***Progress:*** *Conduct further research with potential Program implementation in Spring of 2014.*
Indoor Water Conservation Retrofit Incentive Program	
Research and evaluate the feasibility of implementing an indoor water conservation retrofit incentive program. Program to focus on retrofitting existing residential, commercial and institutional buildings with low-flow fixtures to the minimum requirements of Bylaw 22-11. Within the R-1 Land Use District (the largest of the land-use districts in Okotoks) 57% of the homes were constructed prior to any low-flow fixture requirements (pre 2002).	***Progress:*** *Prepare a cost analysis of what retrofits would cost per household.* *Stakeholder engagement on rebate quantity to incent retrofits.* *Potential implementation in 2015.*

3. UTILITY INFRASTRUCTURE AND OPERATION TOOLS

Water efficiency begins with the efficient operation and management of the waterworks infrastructure.

Lifecycle maintenance and recapitalization of the water and sewer infrastructure is essential in ensuring the effective and efficient collection, treatment and distribution of a potable water supply using existing and future infrastructure to accommodate the Town's growth.

Ongoing review and analysis of the integrity and performance of the waterworks distribution system remains a very high priority. The Town has been proactive and progressive in managing the expansion and upgrades to the municipal water supply, treatment and distribution system, particularly as it relates to accommodating population growth demands. Increasing effort in recent years to obtain data on flow characteristics, consumption patterns, leak detection , etc. have enabled more informed prioritization of water main replacements and distribution system upgrades.

Short-Term Water Supply

As additional water capacity for growth beyond a population of 30,000 is required at present, the Town is pursuing additional up-stream water licenses as a temporary water supply solution while the proposed regional water system from the City of Calgary is being developed. Rehabilitation, upgrades, and capital projects are important activities to ensure the reliable distribution of the Town's current licensed potable water supply. Strategic scheduling of large water users and the residential outdoor odd/even watering schedule, along with automated monitoring, aggressive leak detection, dial up meter reading and education programs help enable the Town to manage daily and peak water demand periods effectively and efficiently.

Long-Term Water Supply

At the November 25, 2013 Town Council Meeting, Council Carried Motion 13.C.599. In summary, the motion states that Council supports the development of a regional water system via Calgary for the future water needs of Okotoks. A regional water system would provide the Town of Okotoks with a secure long-term supplementary potable water supply. As growth occurs, water supply will be drawn from the regional water system to supplement our existing local water supply (license capacity of the Sheep River). Both the acquisition of new water licenses and bulk water drawn from the regional water system will be considered into the future, considering the best economical solution at the time.

WATERWORKS UTILITY MANANGEMENT

Operational Contract & Policy Framework	
Policy Framework for Maintenance and Operations The Town designed and developed an operational contract for the efficient operation and maintenance of the Town's Water Distribution System, Water Treatment Plant and Wastewater Treatment Plant. The Town has a 20 year Operating and Maintenance Agreement (Started June1, 2005) with EPCOR Water Services Inc. to operate and maintain the Town's water utilities. The contract is a fixed annual price contract with CPI adjustments made each year based on a formula that looks at costs in the Calgary Region. Each 5 years of the contract, additional costs due to growth, and regulatory requirements are reviewed and the basic work price is adjusted as required.	***Progress:*** *EPCOR Contract is reviewed every 5 years. Review to be completed prior to September, 2014 for inclusion in the 2015 budget.*
Long-Term Financial Sustainability	
Waterworks system operates at full cost recovery to the Corporation, including overhead (i.e. billing, client interface, Financial Services, Human Resources and Communications etc.). Revaluation of the current financial model will be required once details with the City of Calgary regarding a potential treated water pipeline are resolved. With Okotoks' new direction in growth, the 2030 Financial Sustainability Plan will be required to be rewritten.	***Progress:*** *Current financial model to operate until revaluation is required.* *Revaluation to be completed after negotiations regarding Okotoks' long-term water supply are completed.*

Water Consumption Monitoring And Reporting	
Okotoks IT department developed a GIS based online water utility mapping website where water consumption data for each property was tied to its parcel with a series of pull-down menus. The site enables one to perform water consumption queries for all municipal utility accounts, providing required consumption data to complete detailed analysis. In 2011, administration completed a comprehensive residential water consumption analysis utilizing data from 2007 – 2010. The results of this analysis have been utilized to customize water conservation strategies (specifically the Water Bylaw). Within Okotoks' Legacy Plan (1998), a water consumption target was created as a strategy to obtain unused water capacity through water conservation. The target was originally set at 318 liters per capita per day (lpcd). This target was achieved and surpassed in 2010 through the various water conservation and productivity strategies of this Plan. In 2010, the Town achieved a gross water consumption of 295 lpcd and a residential consumption rate of 162 lpcd. In 2010 the Town adopted a new water consumption target of 295 lpcd. Administration continues to monitor the Town's gross water consumption target with a new water target of 285 lpcd and a residential for 2014. **Appendix A** details the Town's Historical Per Capita Water Consumption.	***Progress:*** *Target of 295 lpcd was not achieved in 2011 (306 lpcd) or 2012 (312 lpcd) due to Crystal Ridge PRV station - (human) error which caused significant leakage. Leak was repaired in 2013.* ***2013 consumption average:*** *Community: 273 lpcd* *Residential: 177 lpcd* *Community Gross Water Consumption Target of 285 lpcd to be maintained for 2014.* *2010-2013 Water Consumption Analysis to be completed in 2014. Develop residential per capita per day target for 2015.*

POTABLE WATER SUPPLY AND COLLECTION

Current and Interim Water Supply

Existing Licensed Water Supply	
Okotoks currently draws its water supply from shallow wells in the aquifer adjacent to the Sheep River. Water is treated at the water treatment plant and pumped to storage reservoirs, in North Okotoks and South Okotoks. Existing Well Field Maintenance and Rehabilitation: Okotoks has 12 existing wells with an additional well to be added in 2014 for increased water capacity (pumping ability) Rehabilitation of wells (pressurizing, silt removal and cleaning of gravels around structures) is required.	***Progress:*** *Annual well rehabilitation ongoing.* *Potential future long range replacement of well field with a Ranney Well (located directly beside the WWTP)*

Water license transfers	
The Town continues to pursue up-stream water licence transfers for its short and long-term water supply. Okotoks will continue to investigate all opportunities for new water licenses and review historic licenses for underutilization and/or surplus to the needs of license holders. Temporary water licenses are also being considered through the Foothills Regional Water Collaborative to secure short-term interim water supply for the community. Temporary licence transfers may rely on an Agreement in Principal with the City of Calgary and Town regarding a long-term water supply option to be completed prior to any temporary transfers.	***Progress:*** *The Town is currently processing two additional water license transfers.* *Okotoks to continue to purse available permanent and temporary water licenses.*
Proposed Long-Term Water Supply: Regional Water System	
At the November 25, 2013 Town Council Meeting, Council Carried Motion 13.C.599. In summary, the motion states that Council supports the development of a regional water system via Calgary for the future water needs of Okotoks. Administration is directed to establish proposed agreements for a regional water system with the Government of Alberta and the City of Calgary. The agreements should include the following factors; • quantity of provincial funding, • responsibilities of the different parties involved, and • proposed timelines for creating the regional system. In collaboration with the City of Calgary, the Province of Alberta and Foothills Regional Water Collaborative, Okotoks has begun discussion to enter into an agreement for the implementation of a regional long-term sustainable potable water supply.	***Progress:*** *The proposed agreements of Motion 13.C.599 is to be brought back to Council within 6 months for approval before final sign-off on the agreements by the Town of Okotoks.* *A progress report from Administration to Council has been requested within 3 months of the November 25, 2013 Council Meeting.*

WATER TREATMENT

Water Treatment Plant (WTP)	
Okotoks Water Treatment Plant is state of the art with respect to quality of water processed and has an estimated lifespan of 50 years. Short and long-term the Water Treatment Plant to supply potable water supply from the existing Sheep River well field for 34,000 residents or beyond with additional water license acquisition.	***Progress:*** *Ongoing operation (short term and long term), no upgrades required at this time.*

Wastewater Treatment Plant (WWTP)	
Okotoks Wastewater Treatment Plant is state of the art with respect to quality of water processed and has an estimated lifespan of 50 years. The plant is limited to processing rate of 10,000 cubic meters per day (with an approximate contingency of 20%). At Okotoks' current consumption rate (295 lpcd) and peaking factors the Town has sufficient facility capacity to supply water to a population of approximately 34,000 people. The original plant's system design was based on a gross water consumption target of 318 lpcd, through reduced water consumption the Town has extended the lifespan of the facility. Concurrent to Okotoks' growth mode, the Town is considering a potential expansion to the Wastewater Treatment Plant to process water for a population of 60,000 people or greater. Expansion of the WWTP hinges on an Alberta Environment and Sustainable Resource Development (AESRD) approval for the processing and dispersion of water from the regional water system via the City of Calgary into the Sheep River watershed. Potential issues with increased water volume and more specifically higher water temperature.	***Progress:*** *Study underway & EPCOR has initiated preliminary discussions with AESRD for the phased WWTP expansion to service a population of 60,000.*

WATER DISTRIBUTION SYSTEM

Managing daily and peak water flow demands

Automated Water Monitoring System	
Continue to provide zoned water consumption monitoring and reporting of baseline data through EPCOR's automated monitoring system to support water demand management and decision making. Monitoring highly important in the summer months when water supply is lowest and scheduling is required for large irrigation users.	***Progress:*** *Open Spaces becoming automated in 2014 for irrigation system monitoring.*
Leak Detection and Water Main Upgrades and Replacement	
Continue to monitor and upgrade waterworks distribution system to enhance efficiency of overall utility. The Town's aggressive Infrastructure Replacement Strategy includes: • advanced leak detection system • water main replacement projects in partnership with EPCOR • automated water system monitoring • upgrades to treatment facilities • 20-year utilities operating contract with EPCOR Water Services Inc. The Town has achieved a less than 5% leak rate within its waterworks utility system. The average leak rate for a North American municipality is 13%. On average the Town currently withdraws 7,200 cubic metres of water and returns approximately 96.2% through the wastewater plant and through the Water Treatment Process. In 2013, 3.8% (99,634 cubic metres) was unaccounted for water lost to infrastructure leaks.	***Progress****:* *Infrastructure replacements, upgrades and expansion projects part of 10 year Capital Plan.* *Continuous improvement to leak detection system.*

Water Pressure Management	
Water consumption can be controlled through water pressure throughout the waterworks infrastructure. In a drought situation or water shortage the pressure within the water delivery system can be reduced by 10psi to conserve water.	***Progress**:* *Pressure zones are utilized to optimize pressure management whenever possible for water conservation.*
Cross Connection Control Management	
The Town has incorporated back flow protection and monitoring requirements into our Water Bylaw. Bylaw 19-09 states that cross connection control devices must be tested at the time of installation of the device and annually as part of comprehensive maintenance program. In partnership with EPCOR, the Town has developed a Cross Connection Control Program. The Town inspects its facilities and irrigation systems cross connection control devices annually.	***Progress**:* *The next phase of the Cross Connection Control Program is to improve communications with building owners to ensure they are completing their annual inspection process.*

WATER REUSE & RAW WATER

Raw Water	
Raw water: untreated well or river water Town operations utilizes raw water from the Nexen Well for: • the watering of boulevard trees and planting beds on Town land (in addition to reclaimed water) • street cleaning (bulk water used in winter) • irrigation of Tourmaline Field, Conrad Field and Riverside Park Note: the Nexen well is winterized and is not utilized in the winter	***Progress**:* *Proposed expansion to include Seaman Stadium irrigation system (not feasible at this time).* *Current issue with the quantity of flow from Nexen Well during watering window.* *Town needs to approach EPCOR to create split feed dedicated to Seaman Stadium to expand system.*

	Reclaimed Water (Post Wastewater Treatment Plant) Reuse	
	Reclaimed water: the filtered and treated output water from a municipal wastewater treatment system. Okotoks utilizes reclaimed water for: • Spraying down process scum at the Wastewater Treatment Plant • Watering of boulevard trees and planting beds on Town land through water trucks (in addition to raw water) • Town maintenance projects (i.e.; storm and sanitary sewer flushing) that can use non potable water Town to consider the development of a policy where Town contractors must use reclaimed water for paving etc.	***Progress**:* *Research and develop policy for Town contractors to use of reclaimed water where viable.*
	Grey Water Reuse	
	Grey water: is the wastewater from showers/baths, bathroom sinks and laundry machines (dark grey water) (does not include waste from toilets/urinals or kitchen wastewater which is called black water). The Government of Alberta has established the Reclaimed Water Working Group to develop appropriate regulations on water quality and technical standards/guidelines to facilitate the safe use of reclaimed wastewater in Alberta. In 2010, Health Canada and the "Working Group on Domestic Reclaimed Water of the Federal-Provincial-Territorial Committee on Health and the Environment" have developed a report: Canadian Guidelines for Domestic Reclaimed Water for Use in Toilet and Urinal Flushing, which establishes technical/scientific specifications/guidelines for the safe reuse of grey water inside a home. The National Plumbing Code (2010) now allows residential grey water reuse as long as the systems meet the "purple piping requirements". Grey water reuse systems are expensive. Unless grey water can be utilized for subsurface irrigation in addition to toilets, the cost may outweigh the water consumptive use (as through Bylaw 22-11, toilets must have a low flush volume). If a pilot project was to be considered, the Town would need to work in partnership with Alberta Municipal Affairs Reclaimed Water Working Group for the development, coordination and execution of such project. The Town would also need to establish an ongoing monitoring process for any new systems.	***Progress**:* *Potential future pilot project for a municipal facility.* *Town would need to approach Alberta Municipal Affairs to volunteer the Town of Okotoks as a "host municipality" for testing grey water reuse systems for toilet and sub-surface irrigation use (only viable if can be utilized for irrigation).* *Potential funding opportunity for a conservation pilot project through the FCM Green Fund.*

Rainwater Harvesting / Reuse	
Rainwater: is the water collected from a roof during a rainfall event and does not include storm water (water from any surface other than a roof). Town to consider a future municipal facility pilot program for the utilization of harvested rainwater for building toilet consumption and site irrigation. Town would need to collaborate with Alberta Environment and Sustainable Resource Development (ESRD) as currently ESRD considers rainwater on non-residential buildings as storm water. The reuse of storm water is much more restrictive than rainwater.	***Progress**:* *Potential future pilot project for a municipal facility.* *Town would need to collaborate with Alberta Municipal Affairs and Alberta Environment and Sustainable Resource Development.* *Potential funding opportunity for a water conservation pilot project through the FCM Green Fund.*

WATER-WISE LANDSCAPING

Weather Based Irrigation Systems	
The Town has been moving toward central control for Town owned irrigation systems. Through a thorough RFP Process the Town is utilizing the Rain Bird IQ v.2 central control system. All new systems with an automatic controller are required to be IQ v.2 compatible. This central control system also utilizes leak detection and will shut down an irrigation system automatically if leaks are detected. The Town has central irrigation controllers at the following locations: • Parks and Fields: Howard Park, Wathen Park, Suntree Park, Otterbien Park, Kinsmen Park, Tourmaline Field, Conrad Field, Riverside Park, Crystal Shores Park, Thompson Park, Littler Field and Drake Landing Soccer Field • School Sites: Foothills Composite, Big Rock, Dr. Morris Gibson, JPII, St. Mary's and Good Shepherd (the Town is also installing main line shut off valves on all school site irrigation systems) • Town Facilities: Okotoks Main Fire Hall	***Progress**:* *All existing systems have been added to the central control system.* *All future sites are required to be compatible and connected to the central control system.* *Create a public awareness program that educates our outdoor water conservation irrigation practices in Open Spaces (summer 2014)*

	Non Potable Water Sources for Irrigation	
	Non-potable raw water from untreated sources (Nexen well) and reclaimed water from the Wastewater Treatment Plant are utilized for irrigation of Open Spaces through water trucks. Nexen well water utilized for the irrigation systems implement at Tourmaline Field and Riverside Park.	***Progress**: Water Truck practice to continue with potential future expansion to raw water irrigation program to include Seaman Stadium and Conrad Field.*

4. EDUCATION AND OUTREACH

Often considered a well-intentioned activity but not a necessity, education and outreach is actually an essential component of any water conservation and efficiency program; even mandatory programs such as water restrictions are rarely successful without education and outreach. Education and outreach is used to inform and engage the community, and encourage voluntary actions (AUMA Water Conservation and Efficiency Handbook).

An effective water conservation strategy is achieved through residential, commercial, institutional and industrial participation in water conservation initiatives and programs that help reduce indoor and outdoor water use and waste (productivity). Through public information and educational programs, residents are empowered to make informed decisions regarding water use and are equipped to develop personal practices to reduce their overall water consumption. The Town Okotoks continues to provide water users with the most informative and innovative water conservation strategies available based on environmental and socio-economic research.

The Conservation Educators Program continues to be the principal method of engaging and educating residents regarding water conservation initiatives and programs. Education and outreach increases citizens' awareness of the importance of water in the Sheep River watershed, ensuring the community's short and long-term water needs are met through balancing the social, economic and environmental needs of the Town.

Over the past five years, the Town conducted a comprehensive series of water and growth community presentations and consultations with its residents. It was imperative that the direction regarding our water supply and future growth be shaped and accepted by the majority of our community. The successful implementation and adoption of the strategies within this Plan rely on the residents of Okotoks supporting the direction the Town has taken with its water supply and management.

Where feasible, the Town showcases innovative water conservation technologies in its buildings and landscapes to demonstrate to the public advanced "new to market" water conservation technologies and strategies.

PUBLIC INFORMATION AND EDUCATIONAL PROGRAMS

Conservation Educators Program	
Continue to engage and educate residents through community-based social marketing techniques regarding water conservation initiatives. Four-five post-secondary students are hired each summer from May through August to educate the community through door-to-door conversations/surveys, public events and social media regarding water conservation practices and programs. 2013 program highlights included: • Approximately 940 households were visited to engage and educate residents about water conservation initiatives and programs; 805 residents were directly spoken to; and 135 door tags were left. • Household surveys were conducted at these door-to-door visits, gathering feedback on Town services such as Cart It (automated waste), Curb It (automated curbside recycling), the Recycling Centre, Cut n' Call (yard waste collection), and the Water Conservation Rebate Program. • During each visit, homeowners were informed of the Town's watering schedule and Water Conservation Rebate Program and were asked to provide feedback on what water conservation practices they believed to be most effective. • Organized and attended multiple 'Environment Week' events, including a 'Water Day' information booth at the Recreation Centre and a xeriscaping booth and presentation at Home Hardware. • Conducted ten Grade 4 class presentations at four different elementary schools in Okotoks regarding energy, water conservation, recycling and composting. • Attend various community events to promote conservation (River Valley Cleanup, Community Parade, Youth Festival, Okotoks Dawg's Opening Game etc.) • Day camps (weekly visits in July and August) • Encourage property owners to only water grass on one of their two watering days, as one inch of watering per week is adequate for established lawns. Funding for the Conservation Educators is provided through a Utilities budget transfer to the Communications Business Centre.	***Progress:*** *Expand school program to include all elementary schools in the Town.* *Organize and conduct presentations at school assemblies (rather than individual classes), thus reaching a wider audience in all schools within the Town.* *Propose an education piece for 2014 about wasteful residential outdoor water practices such as washing of cars, houses, driveways and walkways with hand-held hose (promote bucket and/or broom).* *Potentially expand program to include non-residential customers (additional student to be hired in 2014 for this portfolio).*

Publications	
• Utility Bill Inserts (potential addition of community consumption statistics to customer's utility bills) • Develop Green Guide insert for 2014 issue of Western Wheel. • Green Guide Booklet (2010) to be updated and redistributed in 2015. • Portable and digital road signs • Newspaper advertisements and other media (radio, Okotoks Living Magazine and Okotoks Community Guide) • Annual Community Reports • Xeriscaping Pamphlet (Revised in 2012) • Annual Town Calendar (featuring conservation tips) • e-newsletters (Okotoks Venture & Okotoks News) Through these publications, the Town communicates messages about Town water regulations, financial tools (incentives) and the town water management operations detailed in this Plan.	***Progress:*** *Ongoing Annually. Potential publication on the protection of storm water ponds and wetlands (2014/15)* *Green Guide Booklet to be created in 2015 (messaging focused on continued water conservation with a long-term water solution)*
Town Website	
The Town of Okotoks website (okotoks.ca) has a designated web section to promote the community's Sustainable Okotoks vision. The Sustainable Okotoks section is an essential tool utilized to educate residents on our water supply and the efficient management and consumption of this supply. Web pages currently under Sustainable Okotoks will need a rebranding to accommodate the community's new growth model and the long-term water supply from the tentative regional water system. The Sustainable Okotoks web section is a valuable resource for our communications and marketing needs. Current information published on the Town website include; municipal bylaws, outdoor watering schedule, xeriscaping and horticulture information, conservation messaging, educational campaigns, sustainable events (i.e. Earth Day, Environment Week, Sheep River Valley Clean Up etc.), the Conservation Educator Program and the Water Rebate Program. Another important section of the Sustainable Okotoks website section is to educate the public on the Town's water conservation practices. Basic utility bill calculator to be added to website that calculates a household's bi-monthly utility bill into a per capita per day consumption rate (for comparison to average residential per capita per day rate and proposed future residential target). Proposed addition of a comprehensive utility bill application to the website that compares a household's bi-monthly water consumption to the average and lowest consumption rate in the neighbourhood.	***Progress:*** *New Town website being developed in 2014.* *Sustainable Okotoks section to be completely updated and revised.* *Viability and cost analysis of a comprehensive calculator tool to be researched in 2014.*

Social Media	
Town Communications engages residents daily using social media vehicles and mediates the web communications as required. Daily messaging is sent out to promote the Town's ongoing and current needs (Water Conservation Rebate Program, Horticulture Hotline, publications, workshops/public info sessions/consultations, conservation messaging, water supply, sustainable events etc.) **Facebook** Our Facebook page has over 2,000 likes and is a popular social media platform. **Twitter** Our Twitter page currently has 3,000 followers and has an advantage over existing personal publishing methods as it is delivered to people timely with brief and to the point postings. Residents can easily reply and join in current conversations. The Town uses the hashtag symbol # before a relevant keyword or phrase to categorize Tweets and help them show more easily in Twitter search. #Okotoks #SustOk **YouTube** Visual marketing and a medium to provide education and training to our Town residents. **Flickr** Used for photo galleries to promote Town programs or contests.	***Progress:*** *The Town's social media pages have been vital in sparking civic engagement with our residents and stakeholders.* *Social media to be utilized to promote the new branding of Sustainable Okotoks and future programs and communications/marketing needs.* *Other social media drivers to continue to be added as they gain momentum; i.e. Pinterest.*
Horticulture Hotline	
The Horticultural Hotline provides public education on a variety of topics such as; xeriscaping, insect pest identification, tree/shrub selection, annual and perennial plant selection, gardening, maintenance, etc. The Hotline is operated by Open Spaces (approximately 50% of all queries are tree related). Administration requests residents to send photos or bring bug-infested vegetation to Open Spaces for identification and recommendation for treatment. During the spring/summer season the hotline receives on average 3-6 calls per day.	***Progress:*** *Service is ongoing.*

WATER CONSERVATION WORKSHOPS & PRESENTATIONS

Community Water Workshops and Consultations	
Public consultation regarding long term growth and water supply options has been ongoing since late 2008 and intensified over the recent years as growth pressures in close proximity to Okotoks boundaries accelerated both in interest and densification. Since 2009, the Town conducted several large community consultations on water and growth: • Sustainable Okotoks Where to From Here? Consultation (2009): Three public information sessions and public education campaign through the local paper and radio station. • Our Community's Future Water & Growth Speaking Series (2011): a series of water expert speakers (9 speakers) offered over an eight month period covering a variety of topics such as global, provincial and local water challenges and options etc. • My Okotoks Water & Growth Community Consultation (2012): Four sessions including community (2 sessions), business specific and Town staff consultations.	***Progress:*** *Water and Growth Community Consultation complete (2013)* *Development of Okotoks long-term vision and Integrated Community Sustainability Plan (ICSP) (2014-2015).*
Okotoks Water Presentations	
Town officials and administration provide water presentations to share lessons learned and information about water conservation with other municipalities, schools and interest groups. Presentations (within past five years) have included: • Building Sustainable Communities Conference (Vancouver 2009 & Kelowna 2010 as part of Sustainable Okotoks Presentation) • Federation of Canadian Municipalities (FCM) Sustainable Communities Conference (Ottawa 2010) • Oldman Watershed Council Presentation (Lethbridge 2010) • Water-Meeting the Challenges Presentation (Lethbridge 2012) • Annual Okotoks Water Presentations (regional and local elementary schools)	***Progress:*** *Ongoing. The Town will continue to provide presentations to interest organizations.*
Okotoks Landscape and Horticulture Presentations	
Landscape for Life Community Workshop / Course (to be initiated in 2014) Course covers the planning and implementation of sustainable landscapes that considers soil, water, plant and landscape material selection. Annual Fall Pruning Workshops (a healthy urban forest conserves water, reduces run off and protects urban water)	***Progress:*** *Workshops and courses to be offered annually.*

TOWN DEMONSTRATION PROJECTS

Interior Water Conservation Measures	
Ultra low-flow toilets are being tested at the following Municipal Facilities: • Two 3/6L dual flush toilets at Operations Centre • Two 3/6L dual flush toilets at the Recreation Centre • Ten 4.8L flush toilets at the Fire Hall • Nine 3/4L dual flush toilets at the Municipal Centre	***Progress:*** *All toilets have been successful. The lowest consuming town tested toilet (currently the 3/4L dual flush) is to be implemented in all new municipal facilities and toilet replacements.*
Outdoor Water Conservation Measures	
Drought tolerant grass seed was utilized as a landscape demonstration site at RPAC. Test site was successful and drought tolerant grass has also been implemented at the Southridge Emergency Services Building. Town Xeriscaping Demonstration Projects: • North Ridge Drive and McAlpine Crossing (median planting) • Garden at Recreation Centre (including wild flowers) • Recycling Centre • Library and Municipal Centre Parking Lot • Birthplace groves • Southridge Emergency Services Building Recycled Water Recirculation System at Spray Park Conversion of planting bed at Hunters Gate from an annual to a perennial bed.	***Progress:*** *Ongoing. All new landscape installation projects in Town to consider xeriscaping principles during design and implementation.* *Research potential for a rainwater harvesting and/or grey water project with a Town facility and grounds.*

5. PARTNERSHIPS AND COLLABORATIONS

Water conservation and efficiency does not just happen. It requires significant effort from a range of stakeholders and resource authorities. Partnering with other agencies, businesses, service clubs, community organizations and the media is an effective way of pooling expertise and resources, and decreasing implementation costs associated with the delivery of municipal program (AUMA Water Conservation and Efficiency Handbook).

The continued development and cultivation of existing partnerships at sub-regional, regional, provincial and federal scales is vital to the management of our watershed and municipal water supply. As water has no boundaries what activities occur upstream of our community has great effect on the quality and quantity of our water resource and we have an environmental and social responsibility to those downstream of our municipal borders.

Sub-regional and regional partnerships are paramount in the sustainable management of our shared water resources and in ensuring strong collaborative participation in provincial legislation and regulatory issues affecting municipal water use. The continued participation and cooperation with other regional water users, such as municipalities (Turner Valley, Black Diamond, Calgary, High River and the MD of Foothills) and agricultural and industrial users is important for achieving the town's short and long-term water management goals.

ALBERTA ENVIRONMENT

Alberta Water Act	
Continue efforts and conversations with Alberta Environment to have: • licensing and decision-making based on scientific data (at Provincial level) • in-stream objectives (IO's) based on scientific analysis of the Sheep River watershed. • return flows recognized as "compensation" towards aquatic health and reduction/removal of IO's on junior licenses. • equitable and sustainable water use among licensed water users • equitable treatment for all licensed water users during periods of low flow	***Progress:*** *Conversation and efforts to continue*
Regional Water System	
The Town of Okotoks is working collaboratively with the Province of Alberta, City of Calgary and the Foothills Regional Water Collaborative to secure a long term water supply for Okotoks and region.	***Progress:*** *Continued collaboration*

WATERSHED PARTNERSHIPS AND COLLABORATION

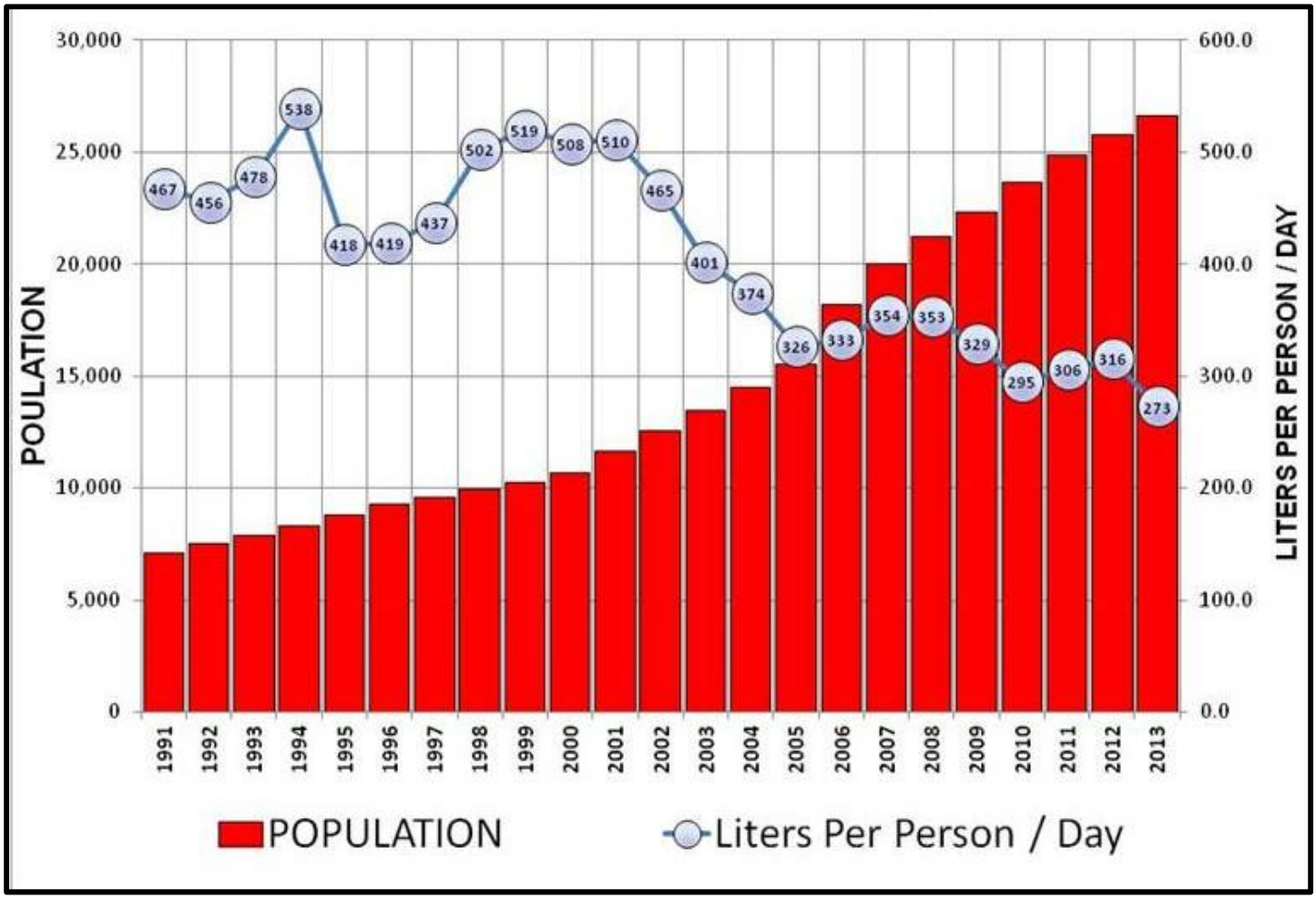
Regional Partnerships	
Participation in the Foothills Regional Water Collaborative with Turner Valley, Black Diamond and MD of Foothills to develop regional solutions to water supply and management.	***Progress:*** *Continued collaboration*
Participation with the following organizations and regional projects: • Alberta Water Council (advocating on behalf of smaller urban municipalities) • Alberta Urban Municipalities Association (AUMA) • Bow Basin Flood Mitigation and Watershed Management Project • Bow River Basin Council (BRBC) • Calgary Regional Partnership (CRP) • Highwood/Sheep Water Balance Project • Integrated Highwood Management Plan	***Progress:*** *Continued collaboration*
The Town of Okotoks has notified the MD of Foothills and the Provincial Government of our intent to annex sufficient lands for our community's projected growth over the next 60 years. The Town and the MD of Foothills, in partnership, will need to develop a new Intermunicipal Development Plan (IDP). A renewed IDP will provide the opportunity to advocate for collaborative protection of the Sheep River Watershed.	***Progress:*** *Annexation procedures in process*

COLLABORATION WITH EPCOR

Collaborate with EPCOR on water conservation and efficiency measures, including incentive replacement programs for residential, commercial, industrial and institutional sectors and for waterworks infrastructure projects and upgrades. Working together on reducing water consumption for water and wastewater treatment processes (i.e.: recirculation of filter to waste process water at Water Treatment Plant and using treated final effluent at the Wastewater Treatment Plant to control scum and foam). In addition to Town conservation education, EPCOR provides school presentations to elementary aged kids (Peter Puffin water conservation).	***Progress:*** *Reviewing potential process water reductions with EPCOR*

APPENDIX A

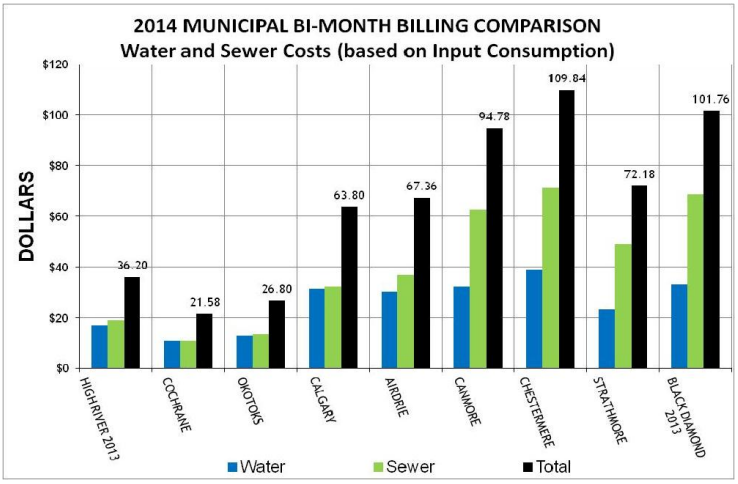
Town of Okotoks Historical Per Capita Water Consumption



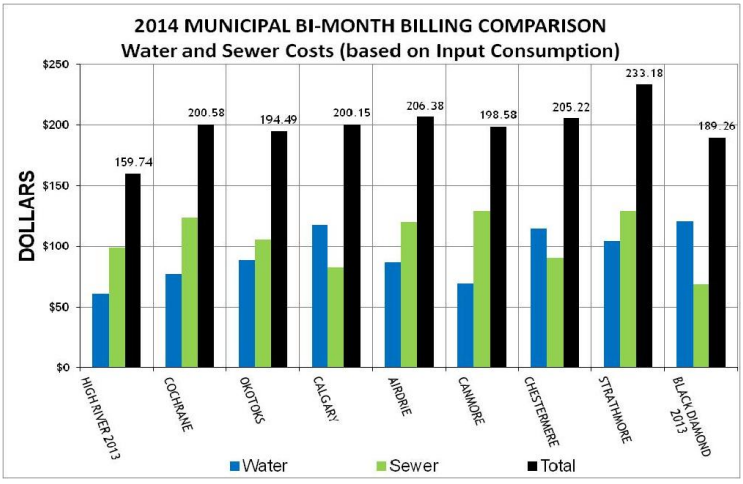
APPENDIX B

2014 Water & Sewer Rates Comparison

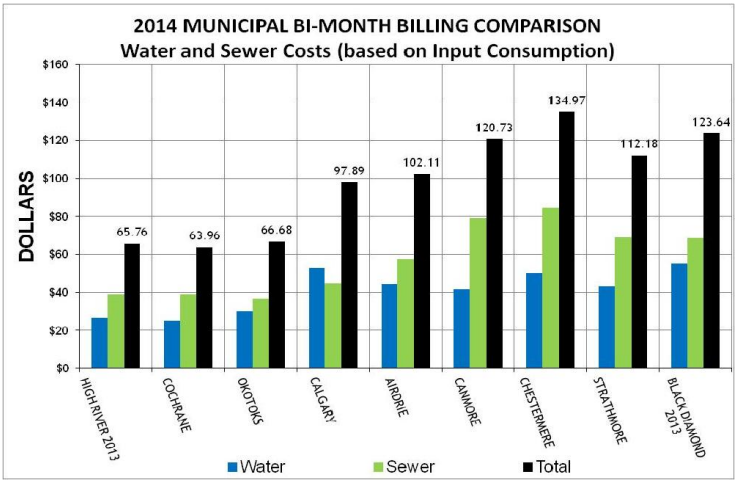
Consumption – 0 Cubic Meters



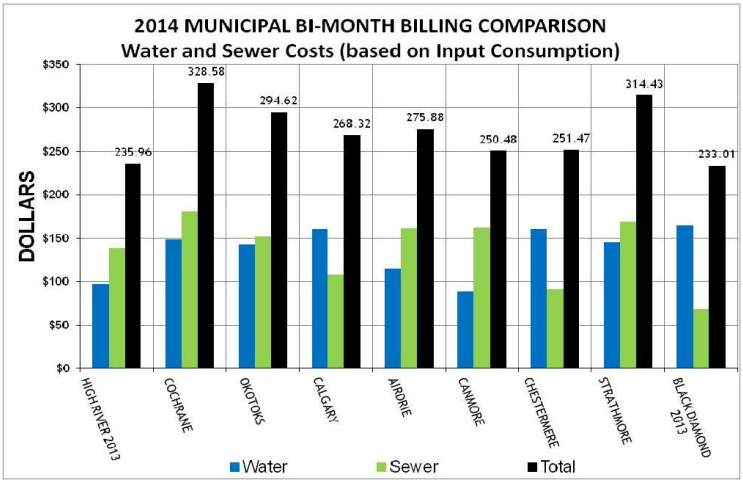
Consumption – 50 Cubic Meters



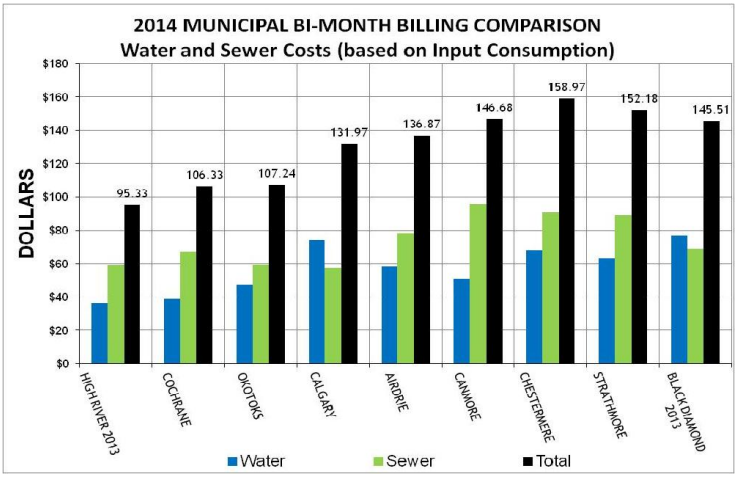
Consumption – 12.5 Cubic Meters



Consumption – 75 Cubic Meters



Consumption – 25 Cubic Meters



Consumption – 100 Cubic Meters