Water Security Agency




Annual Report for 2013-14

and

Annual Report on State of Drinking Water Quality in Saskatchewan

saskatchewan.ca

Government of Saskatchewan

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Letters of Transmittal

Her Honour, the Honourable Vaughn Solomon Schofield,
Lieutenant Governor of Saskatchewan

May it Please Your Honour:

I respectfully submit the Annual Report of the Water Security Agency for the fiscal year ending March 31, 2014 and the 2013-14 Annual Report on the State of Drinking Water Quality in Saskatchewan.

Water security is essential for continued economic and population growth and a high quality of life for Saskatchewan people. To ensure water security, the Saskatchewan Plan for Growth committed to key initiatives related to water including:

- The 10 year infrastructure renewal plan;
- The 25 Year Saskatchewan Water Security Plan; and
- Creation of the Water Security Agency.

Work under the 10 Year Infrastructure Renewal Plan continued including rehabilitation of 1.75 kms of the M1 canal, upgrades at Gardiner Dam and repairs to the Rafferty/Alameda diversion channel. The overall safety of our dams increased as evidenced by the decrease in the risk ratio associated with the Water Security Agency's dams, a reflection of our Government's increased investments in infrastructure.

Water Security Agency and partner ministries and agencies made strong progress on the commitments in the 25 Year Water Security Plan. The Plan's actions are scheduled over five years and Water Security Agency will continue to report progress annually in this report.

The Report on the State of Drinking Water Quality in Saskatchewan shows that we have developed an effective system to ensure safe drinking water. Bacteriological standards and disinfection standards compliance, critical factors for drinking water safety, are high. The percentage of waterworks with a certified operator is at an all-time high of 99.8 per cent and we have an all-time high of 1242 certified operators working in waterworks across the province.

I am looking forward to working with the dedicated and professional staff at the Water Security Agency as we continue working to implement the 25 Year Water Security Plan.

The Honourable Scott Moe
Minister Responsible

Letters of Transmittal

The Honourable Scott Moe
Minister Responsible
Saskatchewan Water Security Agency

I have the honour of submitting the Annual Report of the Water Security Agency for the fiscal year ending March 31, 2014 and the 2013-14 Annual Report on the State of Drinking Water Quality in Saskatchewan. Management is responsible for financial and administrative management of the Water Security Agency and was responsible for preparation of this report. I affirm that the information included in this report is factual and complete.

The Water Security Agency is guided by the 25 Year Saskatchewan Water Security Plan and worked with partners through the year to progress on the 7 goals and 89 actions in the plan. A report on progress under each action is included as an appendix to this report and shows strong progress.

Flooding was a challenge again in 2013. Water Security Agency reactivated the Emergency Flood Damage Reduction Program to respond to this challenge. The program assisted 87 communities, 33 rural municipalities, 7 First Nations and 289 families to take action to prevent flood damage.

Water Security Agency successfully negotiated a protocol with Environment Canada and Departments of Fisheries and Oceans to ensure flooding issues that affect fish and fish habitat are addressed through discussions and joint agreement.

Late in the fiscal year Water Security Agency accepted transfer of the Crooked Lake Dam, the Craven and Valeport control structures from Agriculture and Agri-Food Canada along with $25 million dollars to cover future costs associated with rehabilitation and operation of these structures. This transfer was made possible by resolution of flood claims by First Nations at Pasqua and Crooked lakes.

On behalf of the key partners in drinking water, the Report on the State of Drinking Water Quality in Saskatchewan provides information on work to ensure safety of drinking water. The report shows that Saskatchewan has a strong regulatory system ensuring safe drinking water for our citizens. Surveys show high public confidence, with 88.3 per cent of survey respondents indicating confidence in the quality of their tap water.

I and all staff of the Water Security Agency are committed to ensuring water supports economic growth, quality of life and environmental well being and look forward to working with you as we continue to implement the 25 Year Water Security Plan.

Wayne Dybvig
President

Introduction

This annual report for the Water Security Agency presents the results on activities and outcomes for the fiscal year ending March 31, 2014. In addition, the Annual Report on the State of Drinking Water Quality in Saskatchewan for 2013-14 is attached as Appendix A and a report on progress in implementing the 25 Year Saskatchewan Water Security Plan is attached as Appendix B. These documents report to the public and elected officials on public commitments made and other key accomplishments.

Results are provided on publicly committed strategies, actions and performance measures identified in the 2013-14 Plan.

The report also demonstrates progress made on Government commitments as stated in the Government Direction for 2013-14: Balanced Growth, throne speeches and other commitments and activities of the Water Security Agency.

The annual report demonstrates the Water Security Agency's commitment to effective public performance reporting, transparency and accountability to the public.

Alignment with Government's Direction

The Ministry's activities in 2013-14 align with Government's vision and four goals:

Our Government's Vision

A strong and growing Saskatchewan, the best place in Canada – to live, to work, to start a business, to get an education, to raise a family and to build a life.

Government's Goals

- Sustaining growth and opportunities for Saskatchewan people.
- Improving our quality of life.
- Making life affordable.
- Delivering responsive and responsible government.

Together, all ministries and agencies support the achievement of Government's four goals and work towards a secure and prosperous Saskatchewan.

Agency Overview

The Water Security Agency is a Treasury Board Crown Corporation, with responsibility for managing the water supply, protecting water quality, ensuring safe drinking water, managing dams and water supply channels, reducing flood and drought damage and providing information on water. The Water Security Agency works to integrate all aspects of provincial water management to ensure water supplies support economic growth, quality of life and environmental well-being.

Much of Saskatchewan depends on ground water for domestic, municipal, industrial and agricultural uses. To protect this resource, the Water Security Agency licenses all but domestic users to ensure new development does not adversely impact existing users. The Water Security Agency also operates the provincial ground water monitoring network, conducts regional ground water mapping and resource assessment, and provides information to citizens and industry to help locate ground water supplies.

The Water Security Agency leads the ongoing planning, implementation and reporting associated with drinking water governance and management; implements, inspects and regulates compliance for all of the 796 regulated waterworks and the 588 regulated wastewater facilities in Saskatchewan; monitors surface water quality at 24 primary surface water quality stations in Saskatchewan; manages the drinking water information database (Environmental Management System [EMS]) that stores all of the water quality and inspection data for all of Saskatchewan's regulated water and wastewater works, as well as all of the collected surface water quality data; and manages the SaskH2O.ca website that contains drinking water-related information gathered from water management authorities within the province.

Sound water management and expertise is crucial to successfully meeting the demands of a growing population and economy while maintaining healthy ecosystems. The Water Security Agency, through the Water Availability Study and hydrometric and water quality programs, is making significant investments to improve the knowledge of the quantity, quality and use of surface and ground water supplies in Saskatchewan.

The Water Security Agency also maintains and operates 48 dams and 130 kilometres of conveyance channels (plus ancillary works), and makes significant investments in the rehabilitation and upgrading of this infrastructure each year.

The Water Security Agency provides various hydrology services necessary for proper water management including flood forecasting, operation planning, sustainable water allocation, and low risk building development. In partnership with the Government of Canada, the Water Security Agency operates a 283-station hydrometric network to collect data on stream flows and lake levels. All major surface water allocations, including municipal, industrial, irrigation and intensive livestock uses, are approved by the Water Security Agency to ensure water use is sustainable. Representatives from the Water Security Agency also represent Saskatchewan on trans-boundary water issues through groups like the Prairie Provinces Water Board.

To reduce flood damage, Water Security Agency hydrologists identify elevations of 1:500 year flood and work with the Ministry of Government Relations to ensure at-risk development is prevented in areas susceptible to flooding. The Water Security Agency provides funding to municipalities, conservation and development area authorities and watershed associations through the Water Control Program to maintain water channels and reduce flood risk.

The Emergency Flood Damage Reduction Program was initiated in 2011-12, which helped clients prevent and mitigate flood damage. Due to continuing flood risk in some areas the program was extended into 2013.

Public understanding, support and participation are crucial to effective water management, including efforts to protect source water. The Water Security Agency works with community representatives to develop source water protection plans for watersheds and aquifers. Plans include initiatives to help landowners improve watershed health through restoration of riparian areas, protection of wetlands and grasslands, and encouragement of management practices that benefit fish and wildlife.

As of March 31, 2014, 11 source water protection plans are complete, including: the Assiniboine River; Carrot River; Lower Souris River; Moose Jaw River; North Saskatchewan River; South Saskatchewan River; Swift Current Creek; Upper Qu'Appelle River and Wascana Creek; Lower Qu'Appelle River; Upper Souris River; and a plan for the Yorkton area aquifers. The Old Wives Lake Watershed is currently in the process of developing a source water protection plan.

The groups formed to implement the source water protection plans are important partners. The Water Security Agency works with and provides financial support to these groups to implement the plans. Conservation and Development Area Authorities, Watershed Associations and Rural Municipalities are key partners. The Water Security Agency also supports their work with grants delivered under the Water Control Program.

Legislative Responsibilities

The Water Security Agency administers and is responsible for the following legislation:

- *The Water Security Agency Act*
- *The Conservation and Development Act*
- *The Water Power Act*
- *The Watershed Associations Act*
- Portions of *The Environmental Management and Protection Act, 2002*
- Portions of *The Public Health Act, 1994*

Funding Sources

The Water Security Agency relies on several revenue sources including grants from the province's General Revenue Fund; water rental charges through *The Water Power Act*; industrial water use charges; grants from the Ministry of Environment, Fish and Wildlife Development Fund; and contracts with government and non-government agencies, associations and other sources.

Organizational Structure

The Water Security Agency reports to the Honourable Scott Moe (Minister Responsible for Saskatchewan Water Security Agency) and is governed by a one-person board of directors, which is also the minister responsible.

The Water Security Agency has six divisions (see Appendix C – Organizational Chart), including:

- Corporate Services
- Engineering and Geoscience
- Environmental and Municipal Management Services
- Integrated Water Services
- Legal, Regulatory and Aboriginal Affairs
- Policy and Communications

At the end of the reporting period, March 31, 2014, the Water Security Agency had 206 employees (199.65 full-time equivalents).

The Corporate Services Division also provides payroll services, finance, and information technology support to SaskWater on a contractual basis. The Water Security Agency's Head Office is located in Moose Jaw, but many services and programs are delivered through its regional and environmental services offices in Meadow Lake, Melfort, Melville, Moose Jaw, Nipawin, North Battleford, Prince Albert, Regina, Saskatoon, Shaunavon, Swift Current, Watrous, Weyburn and Yorkton. Offices are also located at the Gardiner and Rafferty dam sites.

Progress in 2013 - 14

Government Goal: Sustaining Growth and Opportunities for Saskatchewan People

Ensure the sustainability of our surface and ground water supplies

Key Actions & Results

Evaluate applications for water use to determine sustainability and impact on other users and decide whether to allocate requested water supplies.

- Water availability analysis and impact assessments were completed upon receipt of applications to use.

Undertake water management modelling of the South Saskatchewan River System.

- A Water Resource Management Model was developed and is being used to assess reservoir operating scenarios and will be used by the Water Security Agency to assess impacts of future water allocation applications.

Develop a Water Resource Management Model for the South Saskatchewan River System.

- A Water Resource Management Model was developed within the overarching Lake Diefenbaker Operating Plan renewal.

Develop predictive water quality and fish habitat models for the Qu'Appelle River system to evaluate local and cumulative effects of new requests for water.

- To provide the information required to develop predictive models:
  - Fish and habitat surveys were conducted upstream of Buffalo Pound Lake, and between Last Mountain Lake and Crooked Lake.
  - Water quality surveys were conducted from the Qu'Appelle Dam to the outlet of Round Lake to determine nutrient mass loading to the system.
  - Collaboration was initiated with several University of Saskatchewan research teams that are developing predictive models.
  - A first version Bayesian decision network model was developed that integrates both water quality and fish habitat models.

Initiate review of existing water rights licenses on a priority basis.

- The review of existing industrial purpose water rights is 80 per cent completed.

Develop sector specific materials such as fact sheets on conservation and efficiency best practices.

- There has been no activity on this initiative.

Identify options for increasing water use efficiencies through regulatory methods.

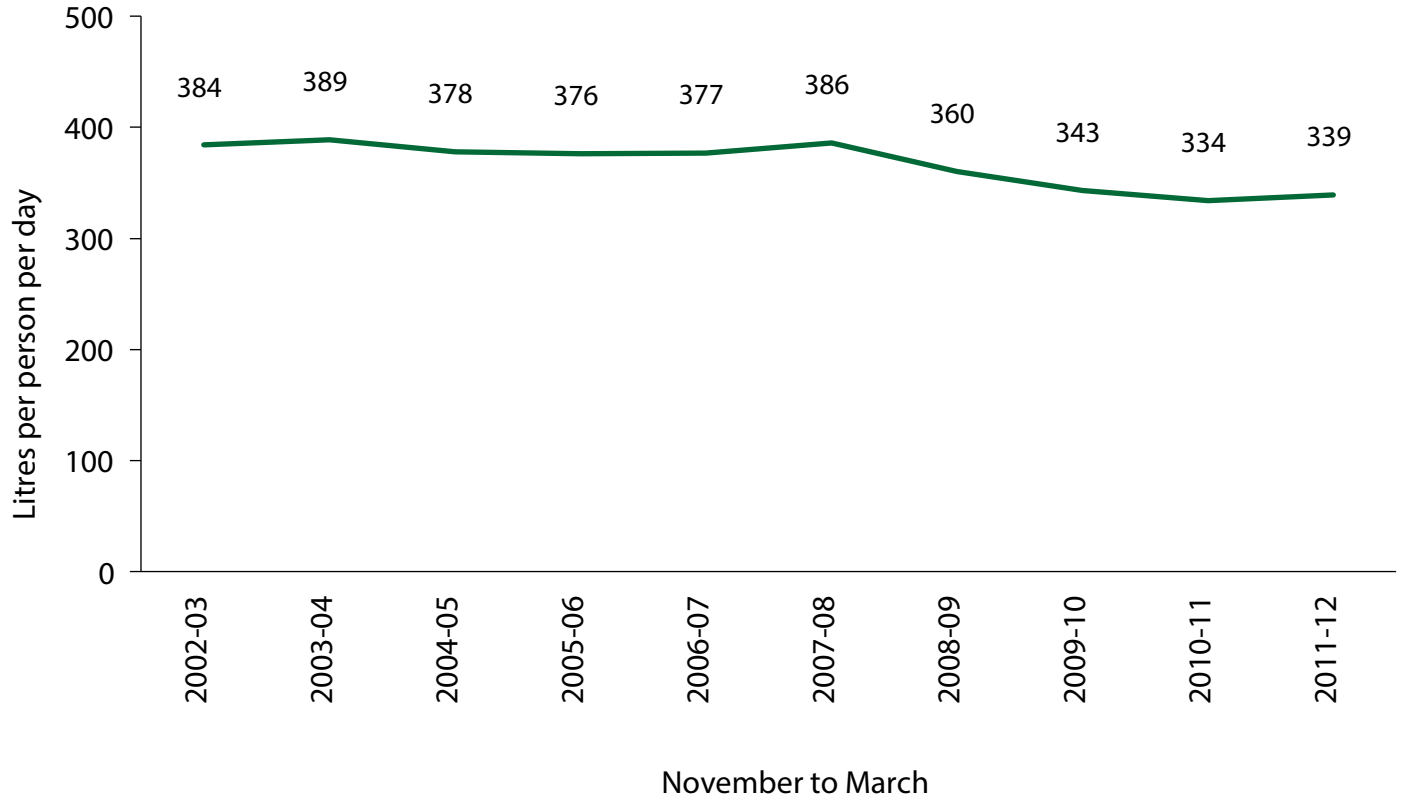
- There has been no progress on this initiative.

Continue development of climate change adaptation strategies through investigation of new opportunities for conservation.

- There has been no progress on this initiative.

Performance Measure & Results

Winter municipal per capita water consumption



Note: Data is collected on a calendar year basis and some communities have not yet submitted their data for 2013, therefore the data required to calculate this metric for Nov. 2012-March 2013 timeframe is not yet available.

Source: Water Security Agency 2014

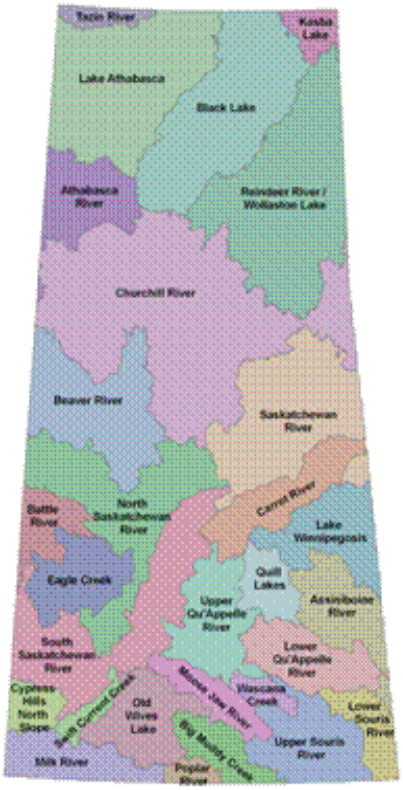
This measure indicates water conservation as it relates to municipal and First Nations community water use, including use in the home, in businesses, and for public services such as firefighting, road building, public pools and rinks. It also includes water lost due to system leakage. Only the winter (November to March) consumption measure is presented, as it more clearly shows trends in municipal water use. Data is derived from community water use records, submitted annually to the Water Security Agency, compared to population records from current Ministry of Health data, or to current census data where health data is not available.

Residential water conservation is a critical component of overall municipal water conservation. In 2006, residential water use in Saskatchewan accounted for an estimated 44 per cent of the total annual municipal use. Toilets alone account for an estimated 30 per cent of in-home residential use. The Water Security Agency promoted conversion to low flow toilets through the Provincial Toilet Replacement Rebate Program and continues to raise awareness of additional water conservation opportunities.

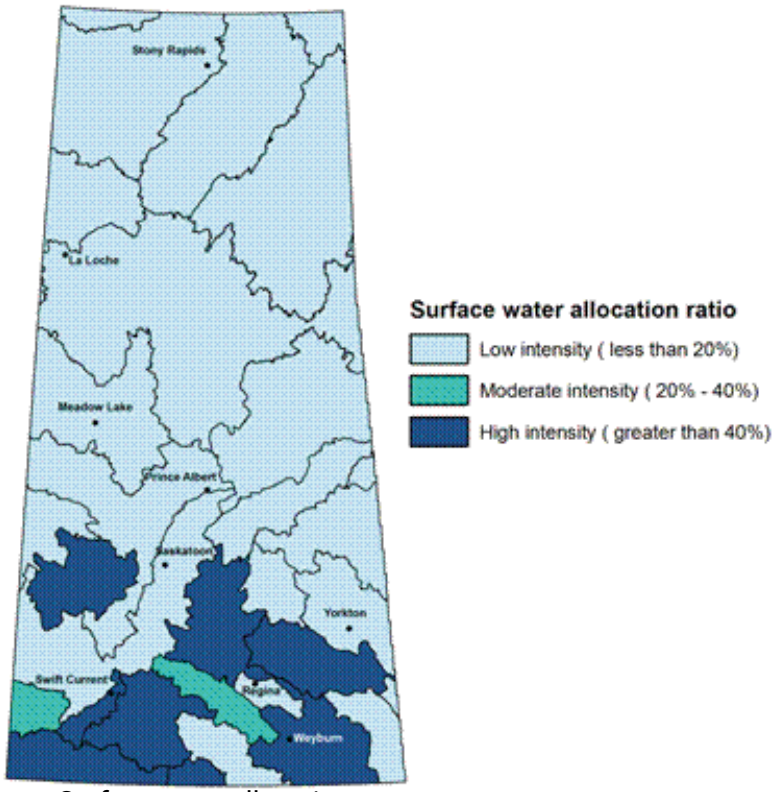
The data indicate a downward trend in per capita municipal water use in recent years. As the Water Security Agency's water conservation initiatives have focused on promoting residential conservation practices, they should directly influence this measure.

In prior reports, the usage data for the City of Saskatoon included water processed by the city but used outside of the city. This affected the calculation of litres used per person per day. The data has been revised for all years so Saskatoon water use includes only that used within the city.

Surface water availability



Saskatchewan's 29 Watersheds



Surface water allocation ratio by watershed

This measure is of interest to the government as an indicator of surface water sustainability. It illustrates the percentage of natural flow (volume of water in our rivers) that is currently allocated for various human uses within a watershed. Surface water allocation is the volume of water licensed for a project that the project is allowed to withdraw from a surface waterbody. This measure shows to what extent surface water resources are currently allocated, and provides information on the intensity of surface water allocation at a watershed level. The values used in this measure don't signify the actual water used or consumed, but rather the amount of water that is allocated for use.

The surface water allocation ratio by watershed figure illustrates that eight watersheds in southern Saskatchewan currently have a surface water allocation ratio greater than 40.

For the Qu'Appelle system, the figure correctly shows that allocations are high compared to the natural flow, but the demand is met by water from Lake Diefenbaker. The Qu'Appelle is unique in that more water than the natural flow is available for allocation to users.

Ensure adequate water information is available to support decision making

Key Actions & Results

Continue the multi-year Water Availability Study, a $7.5 million project to develop the information on water supply and water use needed to support sustainable water resource decisions that can address economic growth and adjust to changes in our water supply due to climate change. Activities for 2013-14 included:

- Development of a detailed aquifer map for the southeast Saskatchewan aquifer systems;
  - A project charter document defining a groundwater assessment of important groundwater source aquifers in southeast Saskatchewan was developed. This assessment will prioritize groundwater information needs including aquifer mapping.
- Analysis of the water supply situation in the South Saskatchewan River System;
  - The water availability work for the Saskatoon South East Water Supply (SSEWS) and Qu'Appelle River has been completed. The work to determine the water available from Lake Diefenbaker has been initiated.
- Continued work to determine the existing water use by sector and delineated by the major basin;
  - Water use evaluation by sector and by major basin was completed.
- Initiation of Value of Water Study and consideration of results in the development of water allocation policy;
  - A steering committee for this study has been established and is comprised of staff from the Water Security Agency, Ministry of Economy, Ministry of Agriculture, and SaskPower.
- Continue Environmental Instream Flow Needs assessments for priority systems;
  - Work was initiated on the Qu'Appelle River system to determine the impacts of water flow on local species and ecology and how much water should be allocated to that purpose.

Develop process by which an annual report on water use by sector will be prepared.

- The process to determine water use by sector within each major watershed was completed.

Prepare a "State of the Aquifer System" report for Regina East aquifers.

- An update report on the Regina East Aquifer Management Plan was prepared.

Continue to collect and analyze water quality data from the 24 provincial primary monitoring stations.

- In 2013-14, water quality data at the 24 monitoring stations was collected and analyzed. All data are maintained in a Saskatchewan database to provide a long-term record of water quality for key rivers.

Continue to collect and assess water quality data from critical sites to determine ecosystem health status and trends and inform decision making.

- Water quality data was collected and assessed from critical sites, including Fishing Lake, Lake Lenore, Rafferty and Alameda Reservoirs, Qu'Appelle River and lakes, and Lake Diefenbaker.
- Water quality data collected at and downstream of Fishing Lake was used to demonstrate that operation of the control structure for the new conveyance channel had an insignificant effect on water quality entering Manitoba.
- The data collected from the Qu'Appelle system will be used to develop site specific surface water quality objectives as part of the Water Management Agreements being negotiated with Qu'Appelle First Nations, and the Lower Qu'Appelle Watershed Planning process.
- The data collected from Lake Lenore and the surrounding lakes is being used to assess salinity changes in lakes within the watershed resulting from high water levels.
- The data collected from Lake Diefenbaker is being used to establish a baseline with which to monitor for long-term changes in water quality.
- Water quality in several smaller prairie streams and rivers was sampled as part of a long-term monitoring program to improve understanding of factors affecting water quality in prairie streams.

Initiate review of the provincial primary water quality station monitoring program.

- A review of historic provincial primary monitoring station data was initiated.

Operate 300 hydrometric stations with the Government of Canada through the federal-provincial hydrometric network.

- Together with the Government of Canada, the hydrometric network was maintained to provide essential data for water management decision making. Federal-Provincial coordination was improved leading to more effective program delivery.

Work with the National Administrators Table on review of the federal role in the hydrometric network.

- Saskatchewan completed its first ever term as co-chair of the national committee for federal/provincial administration and coordination of hydrometric networks. The committee is now focused on core mandate roles and work will continue in 2014-15.

Finalize a plan to address the hydrometric data backlog so information is available for water supply evaluations.

- This action has been deferred until 2014-15.

Continue to operate the 70 station provincial groundwater monitoring network (the observation well network).

- Stations were operated and maintained successfully to continue to collect long term monitoring data regarding the health of the resource and specific important aquifer systems.

Evaluate application and ongoing use of the Saskatchewan Environment Environmental Management System database and SaskH2O website for public delivery of drinking water and wastewater quality information.

- The Saskatchewan Environment Environmental Management System database has continued to serve as a vital component of the Water Security Agency's drinking water and wastewater management and reporting system.
- Preliminary assessment of the system has shown that the functionality provided by the system is necessary to continue to deliver drinking water and wastewater regulatory programming at current levels in the future.
  - Review of the SaskH2O website shows it provides an important service in public delivery of drinking water and wastewater quality information with 219,495 visits, with an average duration of seven minutes, 14 seconds during 2013-14.

Support the work of the Global Institute for Water Security at the University of Saskatchewan in their assessment of the water supply and quality issues in Saskatchewan systems.

- Water Security Agency staff met with Global Institute for Water Security on several occasions and collaborated on a number of projects including surveys for neonicotinoids in wetlands, monitoring of toxic algae in Buffalo Pound Lake and water quality studies at Lake Diefenbaker.

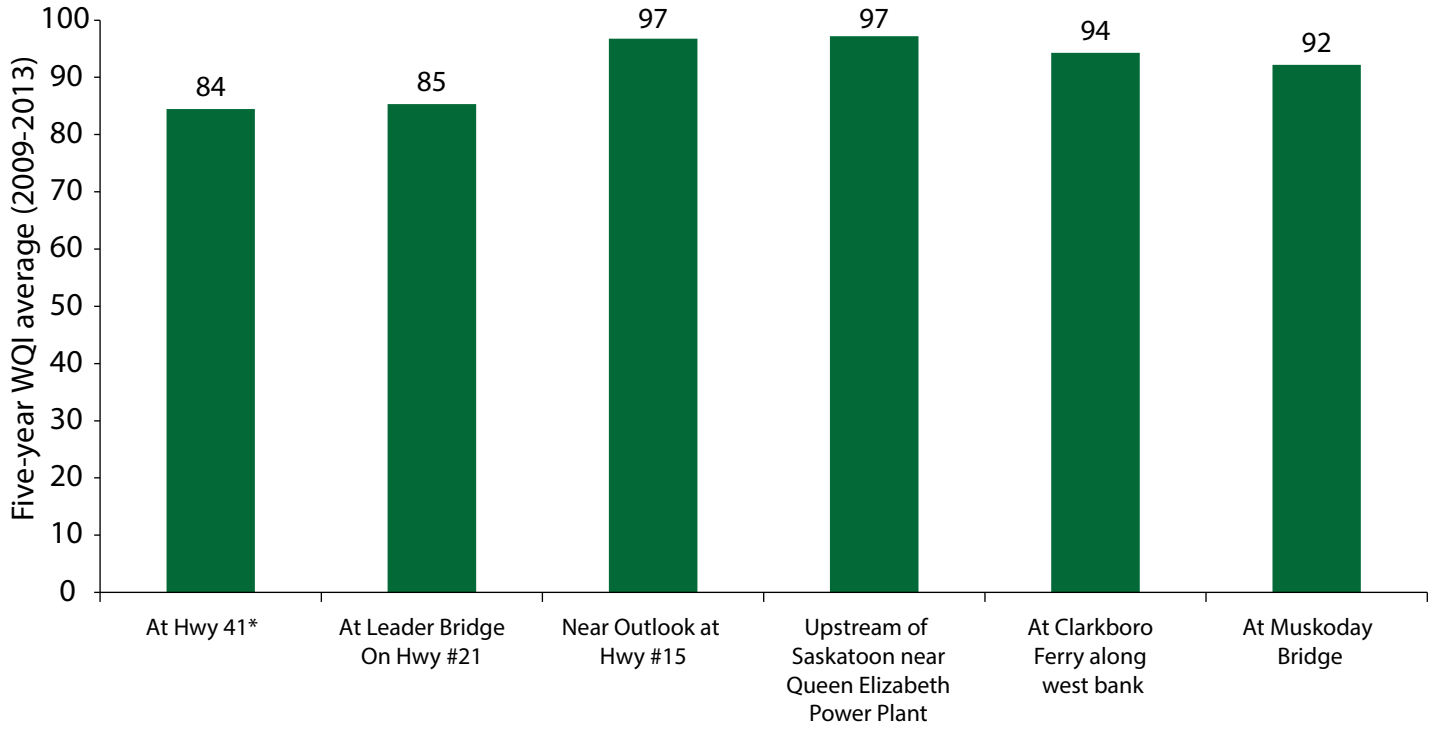
Identify opportunities to collaborate with external academic and research partners on defining and undertaking strategic research initiatives.

- The Water Security Agency has provided a letter of support and reviewed proposals for the Canadian FloodNet research project, under which research on flood estimation, forecasting, monitoring, mitigation and management would be undertaken.
- The Water Security Agency engaged the University of Saskatchewan engineering staff to evaluate various operating scenarios for Lake Diefenbaker. This work will provide independent validation of The Water Security Agency's hydrologic modelling.
- The Water Security Agency reviewed and provided input for a Groundwater research strategy advanced by the Global Institute for Water Security.
- The Water Security Agency established collaborative contracts and proposals related to:
  - Determining the sex ratio of Piping Plover broods using DNA molecular techniques with Environment Canada.
  - Wetland drainage effects on soil characteristics with the University of Saskatchewan.
  - Wetland restoration effects on forage resources with the Manitoba Habitat Heritage Corporation and Ducks Unlimited Canada.
  - Assessment of historical inputs of polycyclic aromatic hydrocarbons (PAHs) in selected northwestern Saskatchewan lakes with the Geological Survey Canada and Queen's University.
  - Paleolimnological assessment of potential impacts on water quality from mining activities in northeastern Saskatchewan with Queen's University.
  - Assessment of the importance of nitrogen deposition and climate on aquatic production in boreal lakes downwind of the Athabasca Oil Sands region with the University of Regina and Queen's University.
  - Technical advice to sturgeon assessment project on Saskatchewan River with SaskPower.
  - Using stable isotopes to understand aquatic food sources of lake sturgeon and bats with the University of Regina, and sturgeon migration with Environment Canada.
  - Aquatic macroinvertebrate reference communities for the Prince Albert pulp mill with SIAST.
- Provided letter of support to University of Regina researchers seeking an NSERC grant to examine antibiotic resistance in bacteria from wastewater effluents.

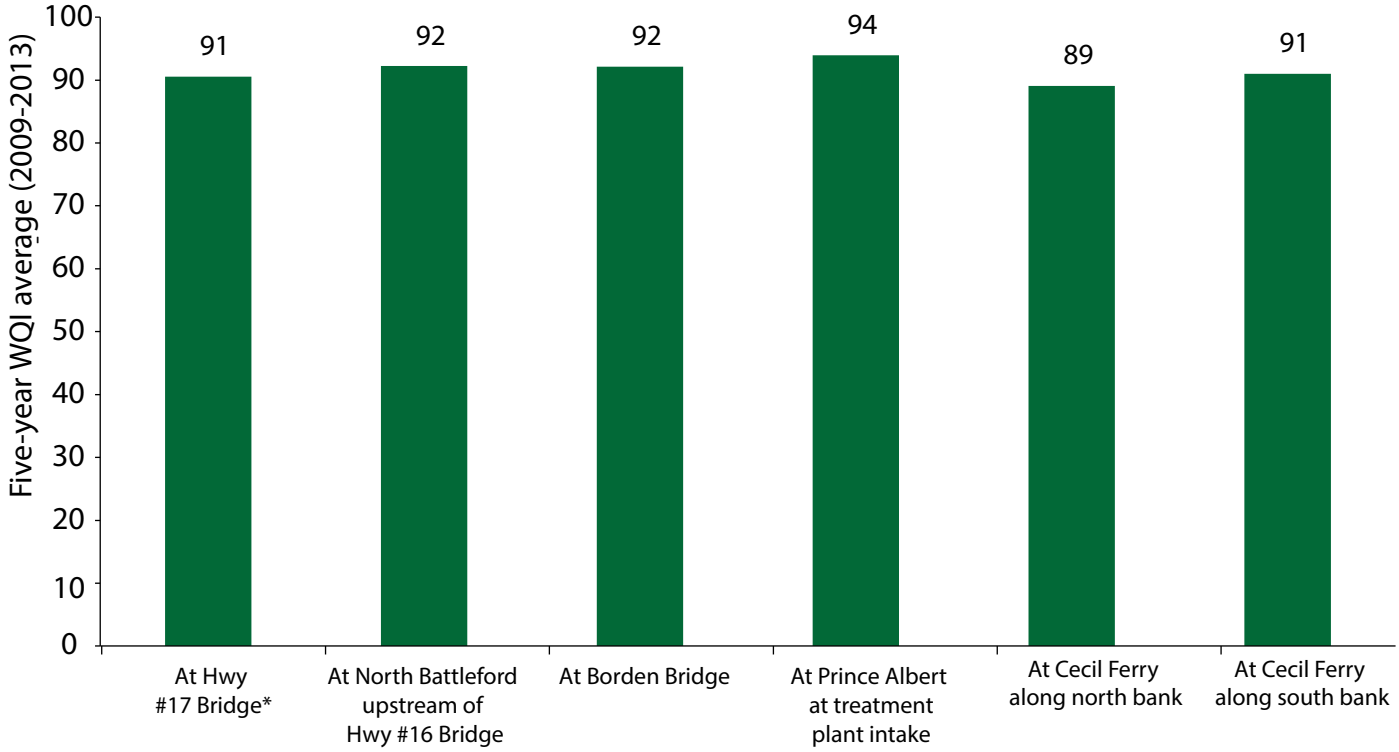
Produce the State of the Watershed Report in a web-based format.

- Work on format and indicators for the report moved forward during the year.

Surface Water Quality Index (WQI)

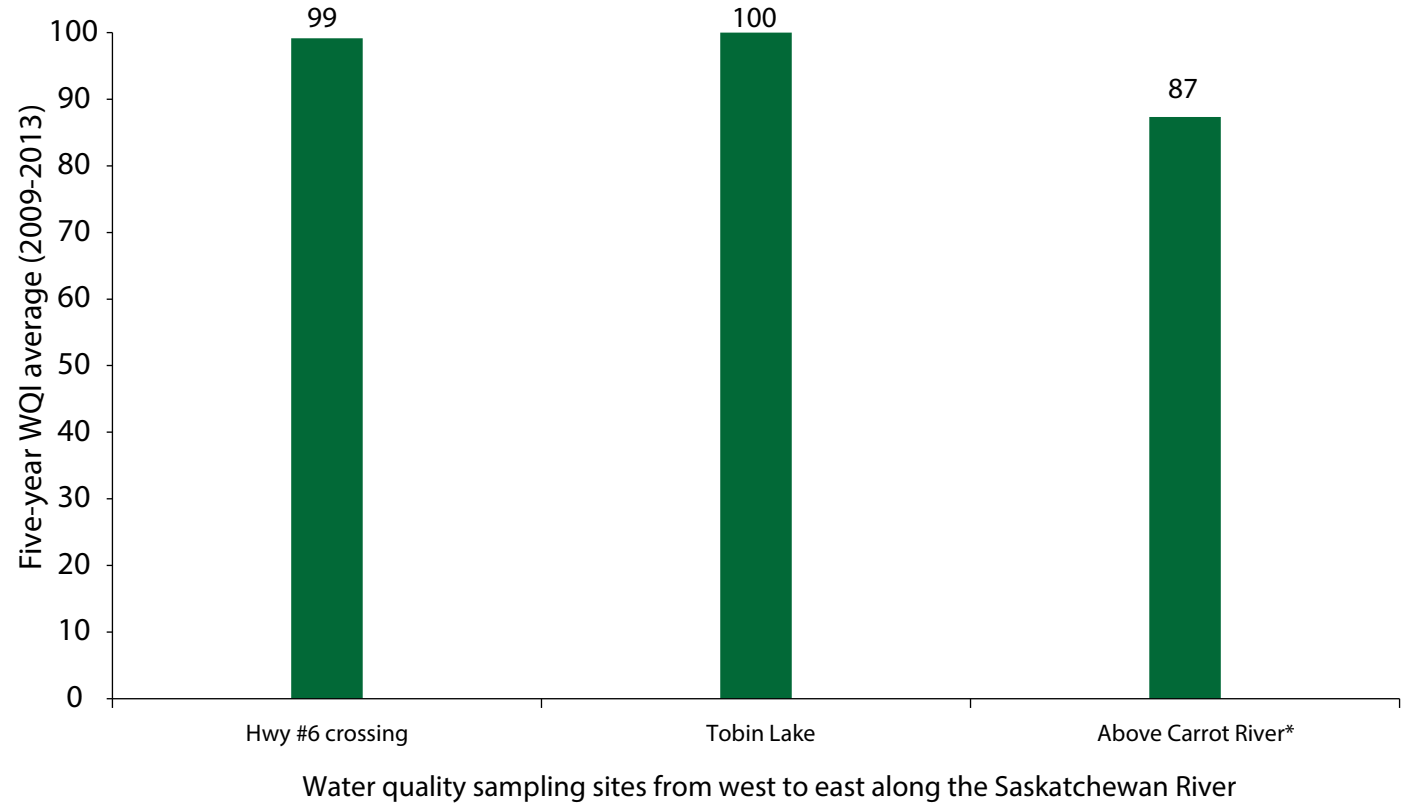


Water quality sampling sites from west to east along the South Saskatchewan River



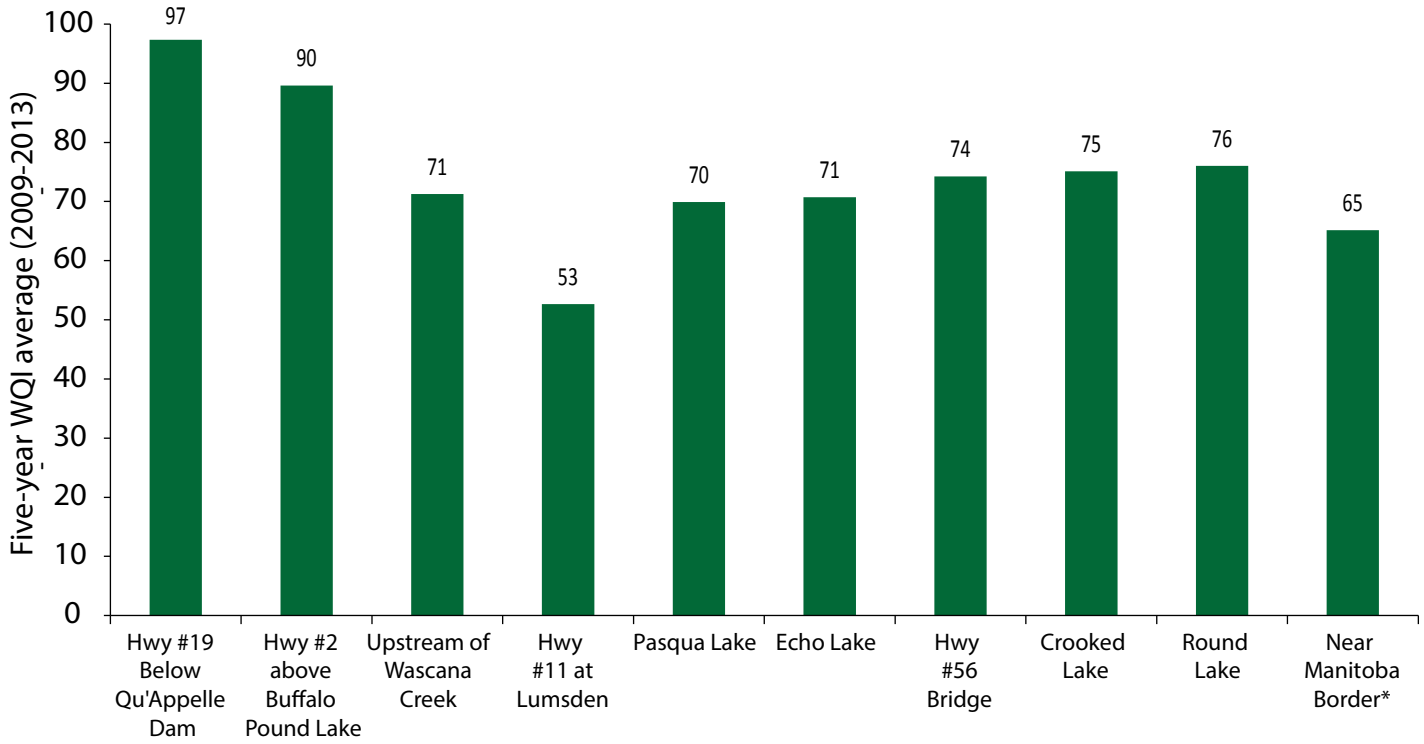
Water quality sampling sites from west to east along the North Saskatchewan River

*The stations marked with an * are calculated as a five-year WQI average between 2008-2012. The data at these sites are collected by Environment Canada and at the time the WQI was calculated the 2013 data were unavailable.*

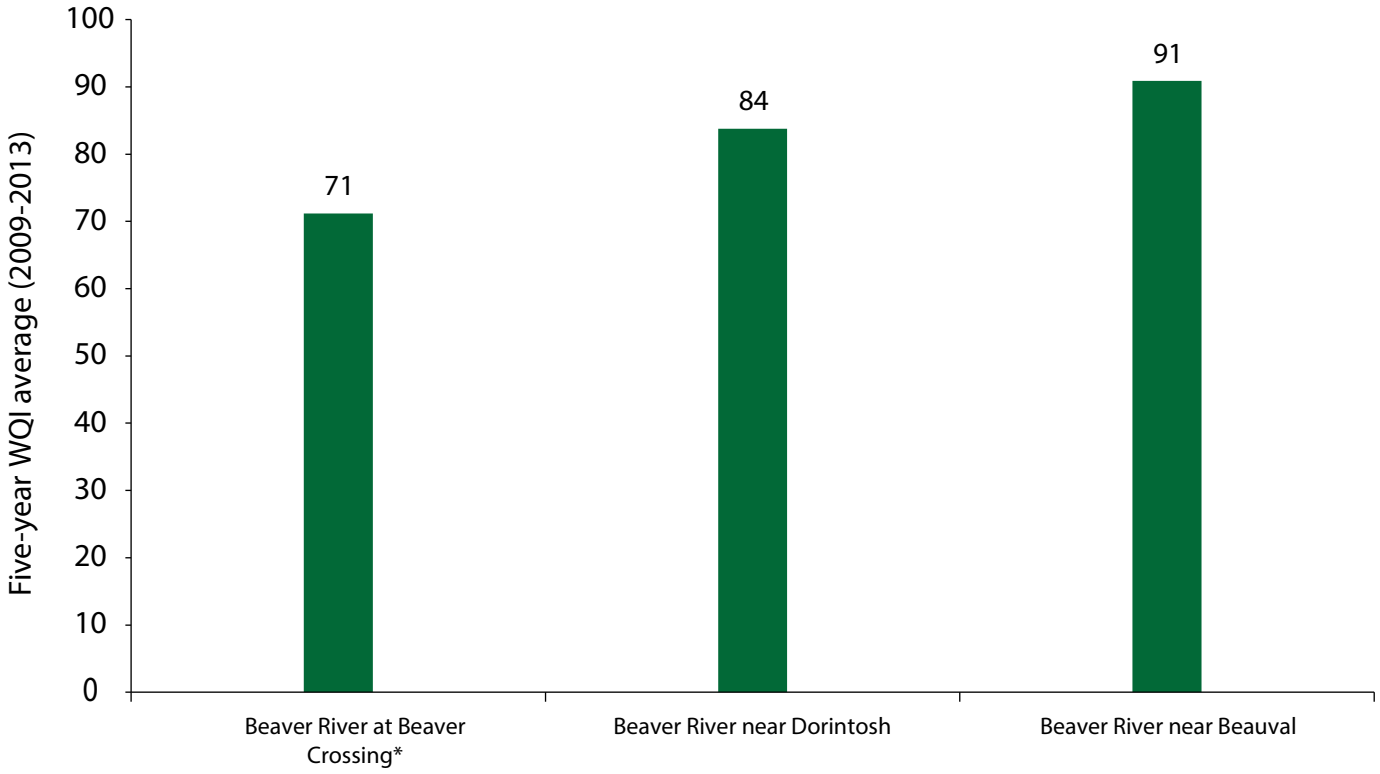


Water quality sampling sites from west to east along the Saskatchewan River

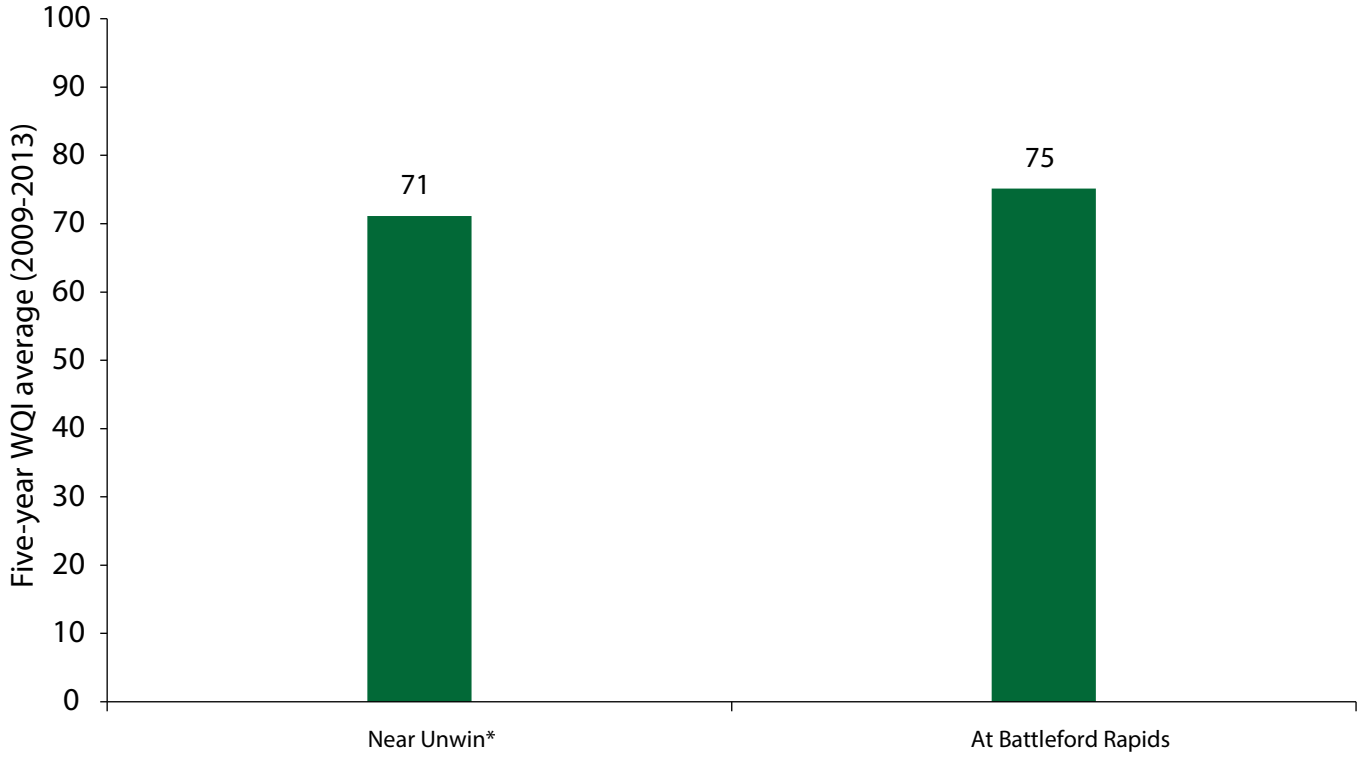
**The stations marked with an * are calculated as a five-year WQI average between 2008-2012. The data at these sites are collected by Environment Canada and at the time the WQI was calculated the 2013 data were unavailable.*



Water quality sampling sites from west to east along the Qu'Appelle River

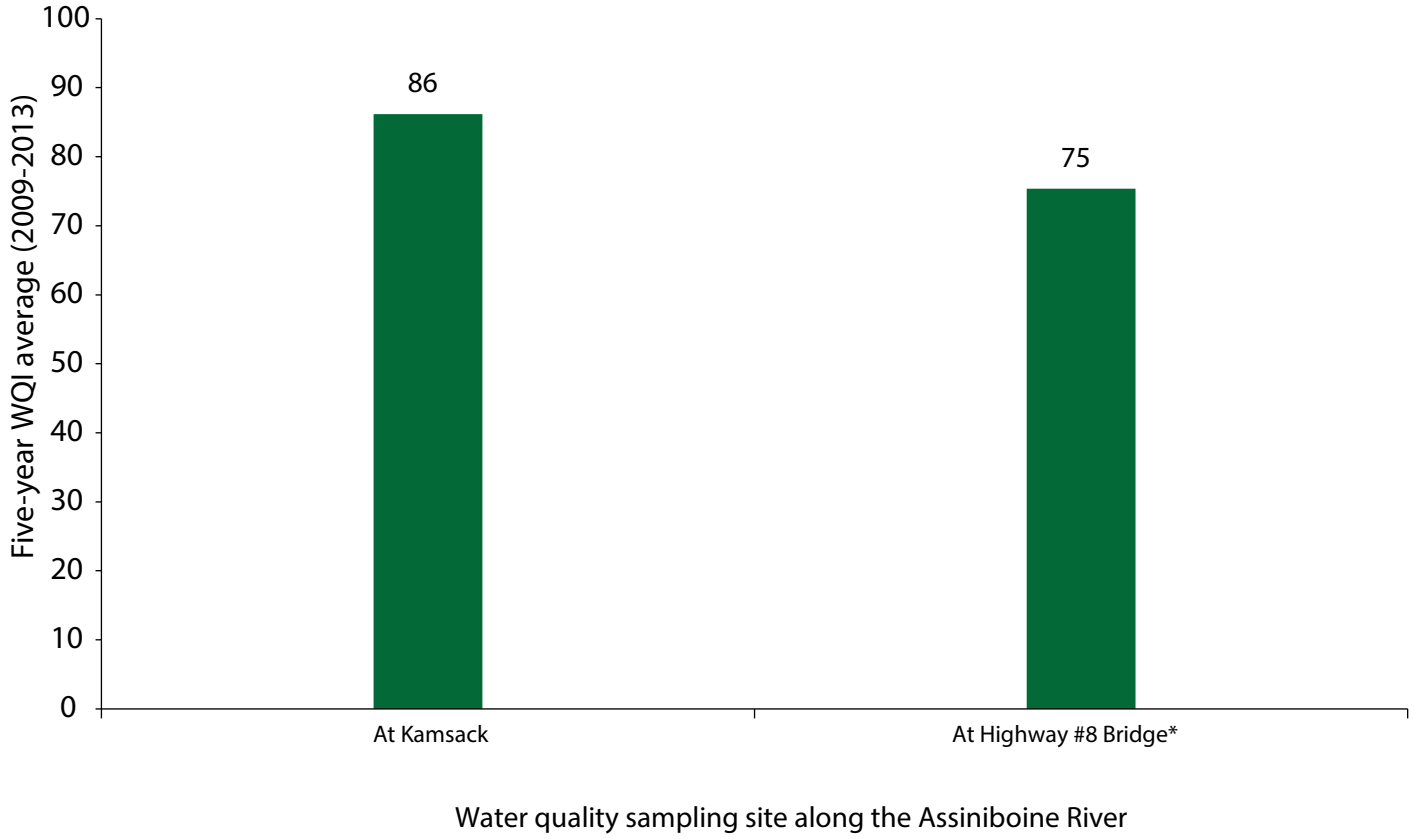


Water quality sampling sites along the Beaver River



Water quality sampling sites from west to east along the Battle River

**The stations marked with an * are calculated as a five-year WQI average between 2008-2012. The data at these sites are collected by Environment Canada and at the time the WQI was calculated the 2013 data were unavailable.*



**The stations marked with an * are calculated as a five-year WQI average between 2008-2012. The data at these sites are collected by Environment Canada and at the time the WQI was calculated the 2013 data were unavailable.*

The Surface WQI is used to evaluate surface water quality in Saskatchewan's major river systems with respect to sixteen variables, including: metals (total arsenic, total chromium, mercury, and total aluminum); nutrients (unionized ammonia, total phosphorous, dissolved nitrogen NO3 & NO2); major ions (dissolved sodium, dissolved chloride, sulphate); bacteria (Fecal Coliforms and Escherichia coli); pesticides (2'4-D and MCPA); and field parameters (dissolved oxygen, pH, and Chlorophyll a (for lakes only)). The WQI is an effective means for summarizing a large number of water quality parameters (Canadian Council of Ministers of the Environment. 2005. Canadian Council of the Minister of Environment (CCME) WQI 1.0. User's Manual. Canadian Water Quality Guidelines for the Protection of Aquatic Life).

The WQI values range between 0 and 100. Once the WQI has been calculated the value can be further simplified by assigning it to one of five descriptive categories:

- **Excellent**: (WQI value 95-100) – water quality is protected with a virtual absence of threat or impairment; conditions very close to natural or pristine levels. These index values can only be obtained if all measurements are within objectives virtually all of the time.
- **Good**: (WQI value 80-94) – water quality is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels.
- **Fair**: (WQI value 60-79) – water quality is usually protected but occasionally threatened or impacted; conditions sometimes depart from natural or desirable levels.
- **Marginal**: (WQI value 45-59) – water quality is frequently threatened or impacted; conditions often depart from natural or desirable levels.
- **Poor**: (WQI value 0-44) – water quality is almost always threatened or impacted; conditions usually depart from natural or desirable levels.

The average WQI values between 2009 and 2013 at all sites along the North Saskatchewan, South Saskatchewan, and Saskatchewan Rivers ranged between good to excellent.

The average WQI values at all sites along Beaver, Battle, and Assiniboine Rivers were classified as fair to good.

Develop or acquire new infrastructure to meet water supply and management needs

Key Actions & Results

Continue to investigate, design and implement maintenance measures to restore in the short term some or all of the original flow capacity of the Upper Qu'Appelle channel.

- Removed Aquatic vegetation and sediment from an approximate 3.0 km length of channel upstream of Eyebrow Lake. Additional maintenance is planned in 2014-15 to restore additional conveyance capacity.

Investigate alternative measures to increase the delivery of water from Lake Diefenbaker to Buffalo Pound Lake in the long term.

- An Engineering consultant completed an evaluation of alternate conveyance options (Phase 1) and, as of fiscal year-end, is preparing feasibility level designs of three in-valley conveyance options (Phase 2). The study is scheduled to be completed in June of 2014.

Continue discussions with Canada to transfer federally-owned infrastructure to the Water Security Agency where appropriate to meet provincial interests.

- Limited progress was made on this action. Canada did, however, formally confirm its desire to pursue discussions around the transfer of its water management infrastructure in Saskatchewan.

Pursue negotiations to transfer Agriculture and Agri-Food's Qu'Appelle water control structures to the Water Security Agency along with appropriate compensation.

- The Craven, Valeport and Crooked Lake water control structures were transferred from Agriculture and Agri-Food Canada to the Water Security Agency late in 2013-14.

Ensure Water Security Agency infrastructure safely meets water supply and management needs

Key Actions & Results

Review and update the Water Security Agency's 10 year plan for infrastructure rehabilitation and dam safety.

- The 10 year plans were periodically reviewed and updated throughout the year. This is an ongoing activity.

Complete an emergency preparedness plan for the Qu'Appelle River Dam and review same with stakeholders.

- The Qu'Appelle River Dam Emergency Preparedness Plan was completed and reviewed with Plan Holders during four meetings held in Moose Jaw, Esterhazy, Lumsden, and Fort Qu'Appelle.

Undertake the following dam safety activities to assess and manage the risks associated with the Water Security Agency's dams, including:

- Prepare and test emergency response plans for Rafferty, Alameda, Gardiner & Qu'Appelle River dams.
  - A draft emergency response plan (ERP) was prepared for the Rafferty Dam. Owing to position vacancies, ERPs for the other dams have not yet been started.
- Commission an independent Dam Safety Review of Alameda Dam.
  - The Alameda Dam Safety Review was commissioned in March 2014 and will be completed in 2014/15.
- Design and install an early warning dam breach identification system at Rafferty, Alameda and Qu'Appelle River dams.
  - Equipment for the early warning dam breach identification system was acquired in 2012-13; however, it was not installed owing to other work priorities.
- Complete geotechnical, operation, and maintenance reports for Gardiner, Qu'Appelle River, Rafferty and Alameda dams.
  - Progress was made on preparing an operation and maintenance report for Rafferty and Alameda dams, as well as a geotechnical report for Alameda Dam.

Undertake rehabilitation of priority works, including the following:

- M1 Canal – Enlarge and line another ≈1.75 km of canal as a continuation of the planned rehabilitation program.
  - As of year-end, the planned 2013-14 canal rehabilitation was substantially complete.
- East Side Pump Station – Install pump monitoring instrumentation including flow meters to complete the planned rehabilitation work.
  - The proposed East Side Pump Station instrumentation installation was deferred to enable re-evaluation of instrumentation needs.
- Gardiner Dam – Tender and construct electrical system upgrades for spillway gates and replace all motors on spillway gate hoists.
  - The planned Phase 1 work including replacing the spillway gate hoist motors, motor control cabinets, and electrical cabling was complete. Phase 2 electrical upgrades including the installation of a new stoplog hoist will be undertaken in 2014-15.
- Boundary to Rafferty Diversion Channel - Repair erosion to diversion channel resulting from 2011 flood flows.

- Repaired one major erosion area in the autumn. Another erosion area remains to be repaired in 2014-15.

- Alameda Dam - Complete geotechnical and structural assessments and develop feasibility level options for necessary upgrades.
  - Most of the planned geotechnical assessments were completed during the year. Structural, seismic and rapid drawdown assessments are to be completed in 2014-15. Substantially completed evaluations as contemplated.

Complete new reservoir operating plan for Lake Diefenbaker.

- As of year-end, assessment of operating scenarios was ongoing. The Water Security Agency expects to provide a draft Operating Plan to government in 2014-15.

As a member of the International Souris River Board, co-lead on development of a Souris River Basin management plan.

- A study plan has been developed and execution is pending funding from the United States and Canada.

Finalize interim reservoir operation plans for Rafferty and Alameda reservoirs.

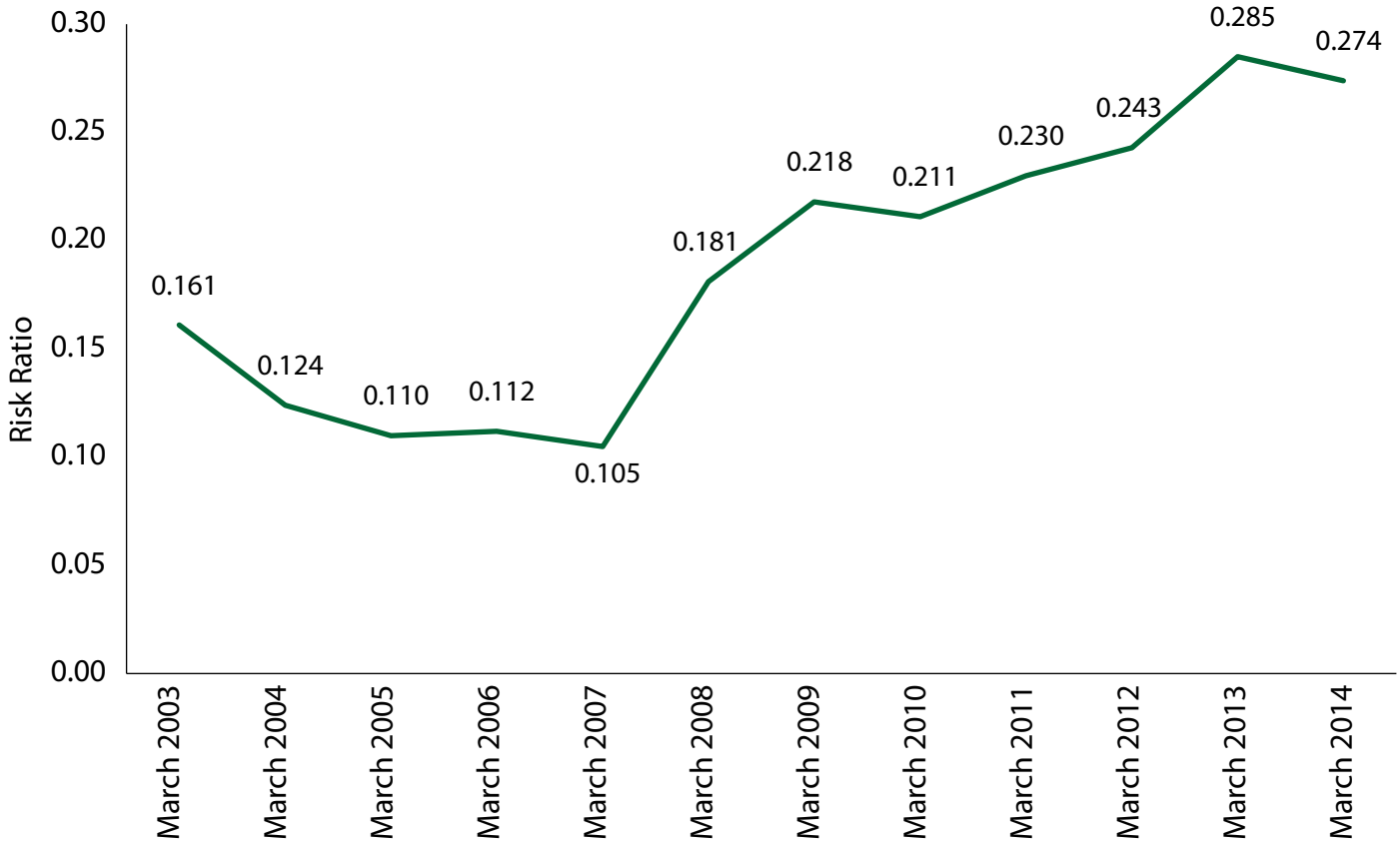
- Initial operating scenarios were modeled. Interim operation plans will be prepared in 2014-15.

Continue to manage Water Security Agency lands to meet responsibilities for ecosystem health, source water protection and infrastructure management.

- The Water Security Agency continued routine management of Agency lands. In addition, Program Review of the Agency Lands Management Program was conducted in 2013-14. It identified some activities that need to be conducted to ensure that the Water Security Agency lands are managed responsibly. The Water Security Agency is in the process of determining how best to achieve these activities.

Performance Measure & Results

Risk associated with Water Security Agency dams



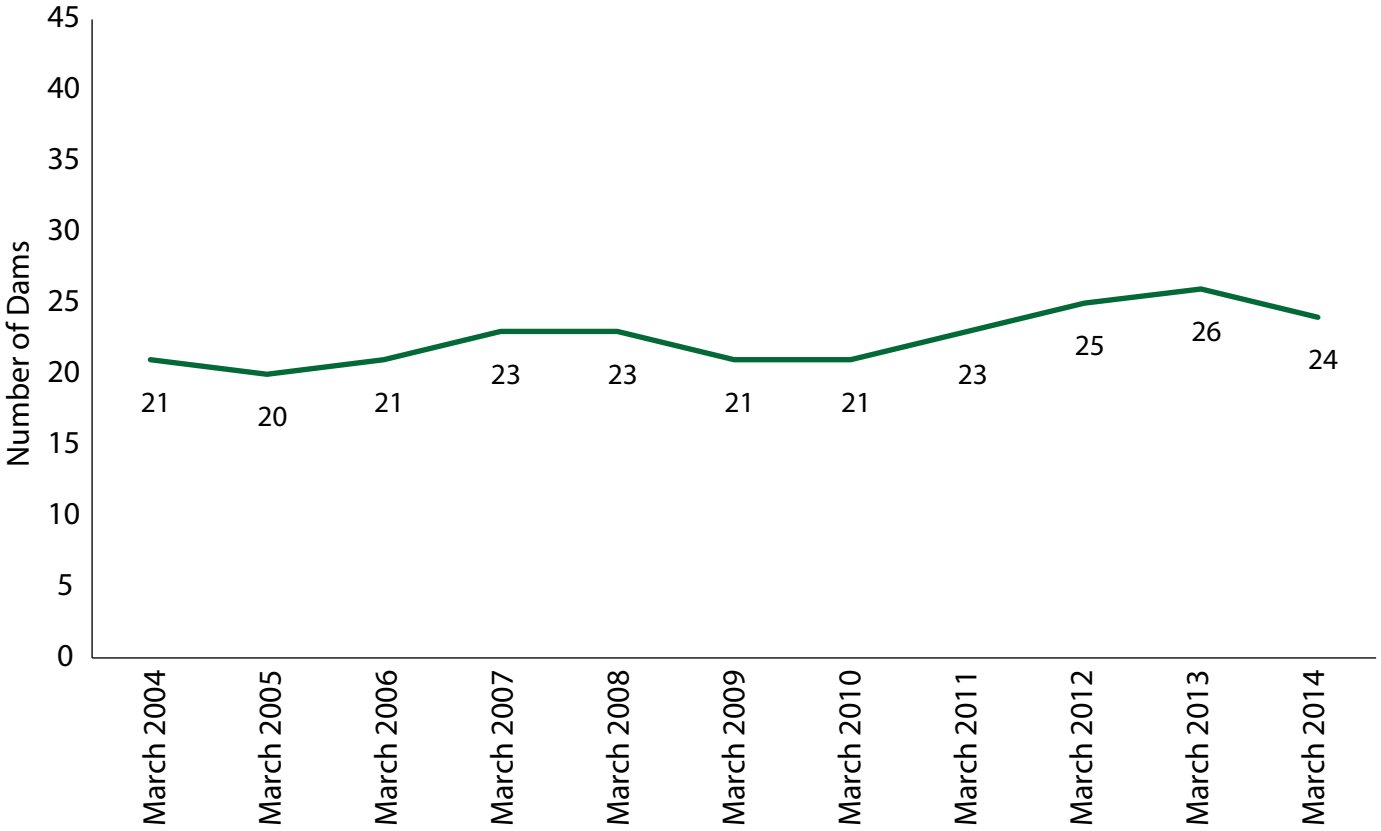
This graph shows the risk associated with the Water Security Agency's dams by considering both the likelihood and the consequences of a dam failure. It is a measure of the safety of the dams and of progress in upgrading the dams to acceptable standards. The Water Security Agency uses the ratio of the assessed current risk to the total possible risk to establish targets and measure progress in reducing risk associated with its dams. Risk, defined as the probability of a failure multiplied by the consequences of a failure, has been assessed in relative values. The Assessed Current Risk is determined by multiplying the Failure Rating and the Consequence Rating for each structure.

The information used to determine Failure Probability values comes from a variety of sources including: annual inspections; internal and external dam safety reviews; design and assessment studies; issue identification by site staff/ project operators; and review of dam performance monitoring data. Consequence ratings are assessed for each structure and based upon an estimation of life safety, economic damages and restoration costs in the case of a failure. A lower ratio indicates safer infrastructure, with a ratio of zero indicating no current assessed risk.

Numerically the risk ratio can be expressed as: Risk Ratio=Σ Assessed Current Risk / Σ Total Possible Risk.

The risk ratio decreased slightly in 2013-14, principally due to the completion of rehabilitation work at Moose Mountain Dam and an assessment of the Qu'Appelle River Dam outlet works which indicates a lower risk associated with that dam. Approximately 50 per cent of the assessed current risk relates to dam safety issues at Rafferty and Alameda dams.

Number of dams requiring upgrades to meet safety and operational criteria



This measure quantifies the number of Water Security Agency dams which require upgrades to meet the provisions of the Dam Safety Guidelines (2007) published by the Canadian Dam Association. The Water Security Agency is responsible for the operation and maintenance of 45 dams (not including the three Agriculture and Agrifood Canada Qu'Appelle dams transferred to the Water Security Agency in late 2013-14) and, like all provincial governments and major utilities across Canada, manages its works generally in accordance with these guidelines.

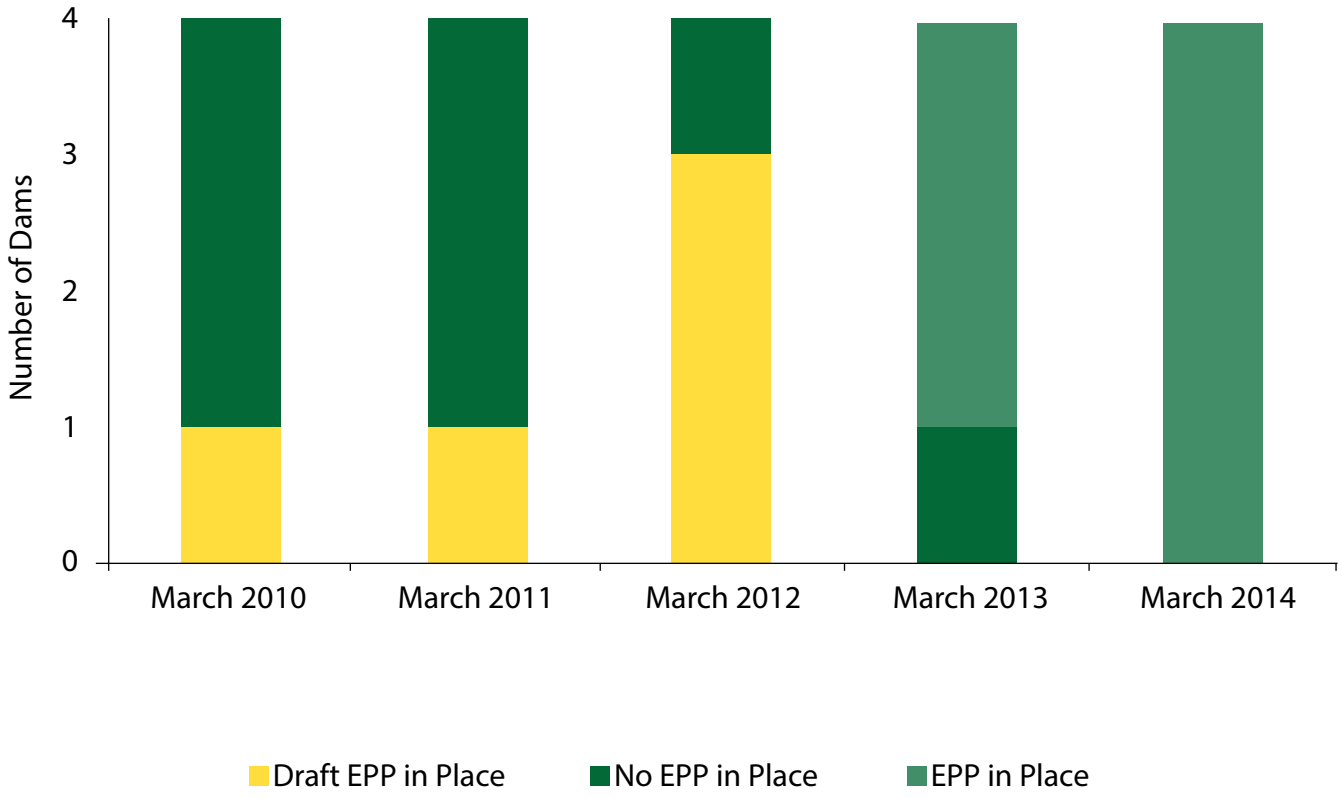
Depending upon the dam, a failure could have significant economic and safety consequences. However, unlike the risk ratio, this measure does not indicate the severity of the identified deficiencies. This measure is useful in gauging progress made over time to reduce the number of deficient dams.

The Failure Probability of a Water Security Agency dam is assessed in terms of (a) hydrology/hydraulic, (b) geotechnical, and (c) structural/electrical/mechanical condition rating factors. These three rating factors vary from 0 (adequate) to 9 (grossly inadequate) for a maximum possible Failure Probability of 27. The assessment of deficiency has changed this year - dams assessed to have at least one condition rating factor of three or greater are deemed to be deficient dams. This differs from past practice where dams were deemed deficient if the Failure Probability (i.e., sum of the three condition rating factors) was assessed to be three or greater. The values for all years shown in the chart above are based upon the new rating methodology. The information used to determine Failure Probability values comes from a variety of sources including: annual inspections; internal and external dam safety reviews; design and assessment studies; issue identification by site staff/project operators; and review of dam performance monitoring data.

In 2013-14, the number of dams requiring upgrades was reduced from 26 to 24 structures as a result of the rehabilitation of Moose Mountain Dam and repair of the concrete outlet structure at Candle Lake. As with the previous measure, this measure is of interest to the government as the upgrading and safety of dams is fundamental to public safety and to dependable water supplies to support the economy.

Performance Measure & Results

Number of required Emergency Preparedness Plans for the Water Security Agency's four major dams



In the event of an emergency, a quick and knowledgeable response to the situation can potentially save lives and reduce damages. This is a measure of the number of required emergency preparedness plans that are in place and are current for the Water Security Agency's four major dams.

Emergency preparedness plans for all four of the Water Security Agency's major dams, including Gardiner, Rafferty, Alameda, and Qu'Appelle River dams have been finalized.

Government Goal: Improving our Quality of Life

Ensure our drinking water is safe

Key Actions & Results

Ensure the provision of safe drinking water through inspections, monitoring, reporting, education and compliance follow-up for the Water Security Agency regulated waterworks.

- The Water Security Agency completed its full inspection schedule in the 2013-14 fiscal year with 896 waterworks inspections.
- 98.3 per cent of human consumptive waterworks met bacteriological standards 90 per cent of the time and 92.5 per cent met the disinfection standards 90 per cent of the time, compared to targets of 95% for both measures.
- All but nine (9) waterworks providing water for human consumptive use met minimum treatment requirements. In all instances the Water Security Agency follows up by means of inspection related comments or requirement as a means to ensure compliance with drinking water quality requirements.
- The Water Security Agency provided updated fact sheets and discussed drinking water related requirements as a component of waterworks inspections.

Review and revise current educational materials to ensure these are current and an effective means to inform water purveyors and consumers.

- Review of fact sheets and educational materials related to drinking water is underway. Over the 2013-14 fiscal year there were revisions to several factsheets on drinking water management posted on the SaskH2O website by the Water Security Agency.

Post any revised fact sheets and educational materials on the Water Security Agency's website, and promote educational efforts through SUMA, SARM and the Saskatchewan Association of Rural Water Pipelines meetings and publications.

- The Water Security Agency continued to revise educational materials and fact sheets and post these to the SaskH2O website during the 2013-14 fiscal year. Several revised fact sheets were provided.
- The Water Security Agency also participated in the Saskatchewan Urban Municipalities Association (SUMA), the Saskatchewan Association of Rural Municipalities (SARM) and the Saskatchewan Association of Rural Water Pipelines conferences and meetings during winter 2014 and provided educational materials and factsheets on drinking water and wastewater management.

Develop and distribute factsheets on managing drinking water production during flood events through promotional efforts with SUMA, SARM and the Saskatchewan Association of Rural Water Pipelines meetings and publications.

- Private wells flooded in spring 2013 have been tested and advice provided to users. Similar service will be contemplated in the event of future emergencies.
- Informal information was developed and distributed as part of flood preparations during spring 2013. Formal fact sheet preparation based on that approach is pending.

Encourage consideration of conversion to regional systems during waterworks upgrade evaluation and predesign plan review.

- Throughout the fiscal year the Water Security Agency encouraged, through discussion with project proponents, subdivision application reviews and work with funding agencies such as Government Relations.

Support and work with SaskWater to evaluate and assess (with federal and First Nations governments) opportunities for the province to provide infrastructure, including connections to regional water systems, and technical and inspection services on reserves on a cost-recovery basis.

- The Water Security Agency has met with SaskWater to define strategies to provide infrastructure including connections to regional water systems, and technical cost recovery services to First Nations on a cost recovery basis.
- The Water Security Agency consulted with Aboriginal Affairs and Northern Development Canada to aid that agency in defining future drinking water and wastewater regulatory requirements for First Nations. Part of that discussion highlighted reference to opportunities for regional systems.
- The Water Security Agency promotes regional systems and services whenever possible.

Initiate study to consider the application of Point of Entry water treatment devices for use on treated and raw water pipelines in rural Saskatchewan.

- Two studies were initiated in 2013-14 and are still underway at the end of the fiscal year. One study is being conducted by the Water Security Agency; another is being conducted by an engineering consulting firm under contract with the Water Security Agency.

Consult with 2002 Long-Term Safe Drinking Water Strategy partners on the status of actions under this former strategy.

- This work is rescheduled for the 2014-15 fiscal year.

As part of review of the approach to safe drinking water under the 25 Year Water Security Plan, consider and evaluate the regulatory regime applicable to semi-public systems.

- This work is rescheduled for the 2015-16 fiscal year.

Continue to develop drinking water guidelines for Water Security Agency regulated water treatment plants in the province.

- During 2013-14, through the Federal-Provincial-Territorial Committee on drinking water quality standards were completed for vinyl chloride, turbidity, protozoa, E. coli, coliforms, and heterotrophic plate count (micro-organisms). Work was commenced or underway for numerous parameters including selenium, nitrate/nitrite, ammonia, benzo(a)pyrene, pH, toluene/ethyl-benzene/xylene, PFOS/PFOA, copper, tetrachloroethylene, 2,4-D, atrazine, lead, bromate, manganese, Microcystin algal toxins and uranium.
- Most fact sheets regarding drinking water management were re-branded to reference the Water Security Agency's role in managing drinking water in the province.

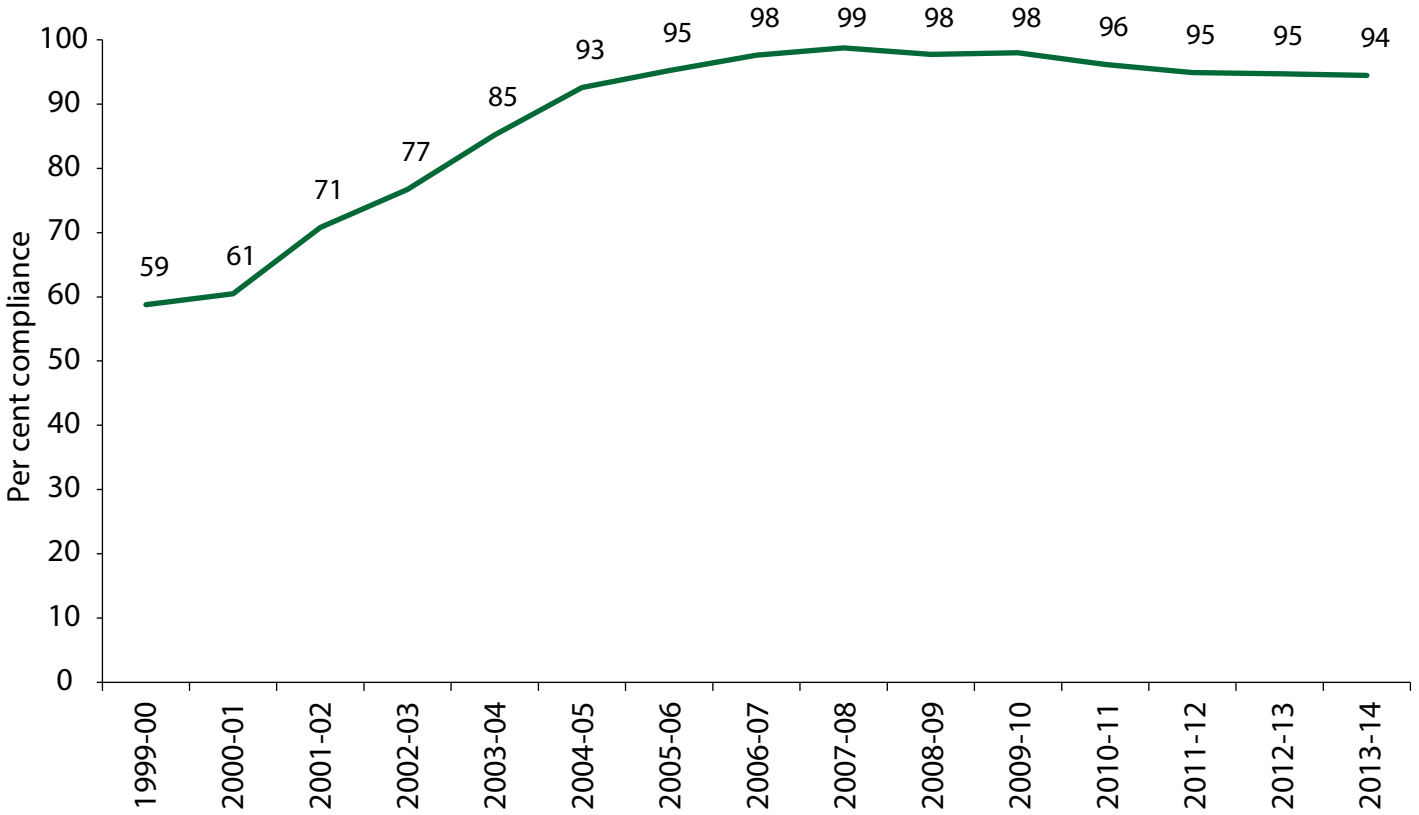
Continue to develop codes of practice, guidelines, best management practices, and design standards for Water Security Agency regulated wastewater and biosolids treatment facilities in the province.

- During 2013-14 the Water Security Agency updated its Guidelines for Sewage Works Design and Stormwater Guidelines.

Continue to collect source and treated drinking water samples from selective affected communities in the province to identify parameter excursions, assess the performance and or evaluate the treatment system provided by the communities, and conduct research if needed to assess the risk.

- Through permit requirements, the Water Security Agency collected water samples to assess drinking water quality and permit condition excursions. During 2013-14 there were 21,419 routine bacteriological water quality samples collected of which 115 samples (0.537 per cent) exceeded the water quality standards of zero total coliforms, zero fecal coliforms or greater than 200 background bacteria per 100 millilitres of water.
- During 2013-14 the sample submission rate for health and toxicity samples was 79.4 per cent and the parameter standards compliance rate was 92.14 per cent.

Drinking water quality standards compliance

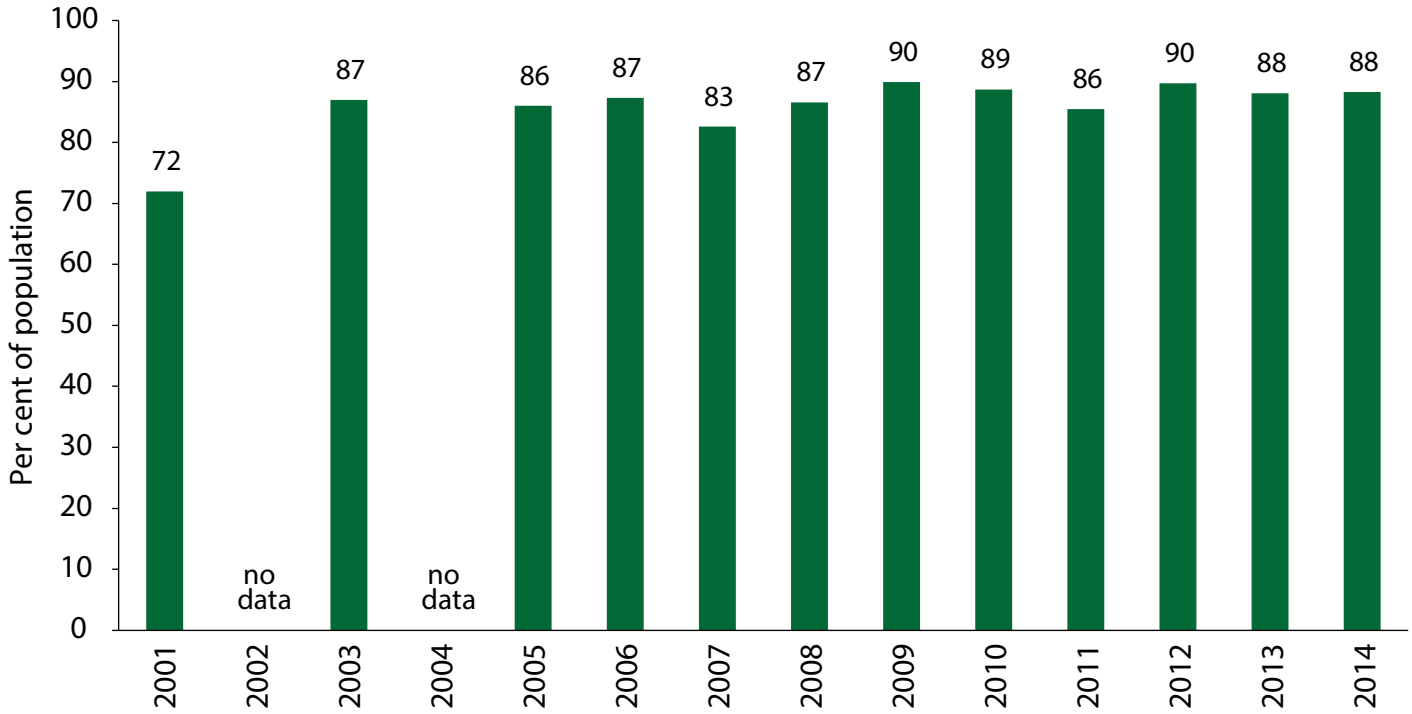


The drinking water quality compliance indicator is an average of compliance with disinfection and bacteriological standards, both of which measure compliance with drinking water quality standards. This indicator looks at both the results of bacteriological water quality monitoring and the level of disinfectant present in drinking water and is a good predictor of the safety of drinking water. Compliance with drinking water quality standards for disinfection and bacteriological quality is important as microbial contamination in water supplies can quickly result in significant illness. Proper filtration and disinfection is an important way to ensure safe drinking water and prevent the outbreak of waterborne diseases. The indicator reports on the actions of the Water Security Agency in addressing risks to the health of people and the environment and key actions related to ensuring safe and sustainable drinking water. The accuracy of this indicator is fully dependent on accurate testing and reporting by regulated waterworks operators.

The drinking water quality compliance indicator has remained very good for the past few years and is relatively stable. The Water Security Agency will continue to reinforce the need to comply with disinfection requirements and proper reporting of disinfection values in 2014-15 and beyond to ensure increased awareness. Ongoing inspection and education awareness initiatives with waterworks owners and operators are planned to sustain good performance in achieving water that is safe from bacteriological threats and meets disinfection standards.

Performance Measure & Results

Drinking water quality satisfaction



Source: Ministry of Environment Polling Results

The Drinking Water Quality Satisfaction indicator is based on the results of annual omnibus polling of Saskatchewan residents on their level of confidence in the quality of their drinking water supply. The measure is actually the per cent of survey respondents indicating that they are very or somewhat confident in the quality of their tap water. This indicator reflects upon the success of the Water Security Agency in advancing safe drinking water at various public drinking water supplies (municipalities, pipelines, large commercial water systems) across the province. The indicator reports on the actions of the Ministry in addressing strategies of preventing and reducing risks to the health of people and the environment and key actions related to ensuring safe and sustainable drinking water. The accuracy of the indicator is limited only by the accuracy of polling methods.

The drinking water quality satisfaction indicator has remained above 80 per cent since 2003. Ongoing attention to actions such as consumer education efforts, waterworks inspections, implementation of water quality standards, water workshops and consumer notification will help to maintain a high level of public confidence in the safety of drinking water in the future.

Key risks to achieving this measure include: lack of public knowledge about the effectiveness of drinking water quality compliance requirements and efforts; major climatic events that impact base survey water quality and quantity (such as sustained droughts or major flooding); and upsets or significant problems at a waterworks for a major centre in or beyond the province that may influence the confidence of a significant portion of population in Saskatchewan. There is also some risk in how the survey is constructed (for instance, the order in which questions are asked and the possibility that other topics covered in the survey might influence the respondents' answers).

Ensure water quality, aquatic habitat and aquatic ecosystem function is sustained.

Key Actions & Results

Define water quality objectives for the Qu'Appelle River system.

- Water quality surveys were conducted from the Qu'Appelle Dam to the outlet of Round Lake to determine nutrient mass loading to the system. Development of predictive models using the nutrient mass loading data will support definition of water quality objectives as part of the Water Management Agreements being negotiated with Qu'Appelle First Nations, and the Lower Qu'Appelle Watershed Planning process.

Continue community-based watershed planning, including piloting a revised watershed planning process with the Old Wives Lake Watershed.

- Staff continued community-based watershed planning in Old Wives Lake Watershed in 2013-14 and forecast completion in 2014-15.

Work with Saskatchewan Association of Watersheds to more clearly identify the future roles and responsibilities of watershed and aquifer planning groups, including the renewal of source water protection plans.

- Executive members met with Saskatchewan Association of Watersheds (SAW) officials several times in 2013-14 and participated in a strategic business planning exercise with SAW.

Evaluate the need to expand source water protection planning to additional watersheds or aquifers.

- Initiated internal discussion on priorities for additional plans.

Assess and renew the approach to implementing source water protection plans to ensure that threats to source water are mitigated into the future.

- A renewed approach to planning based on the process used for the Lower Qu'Appelle Watershed (published March, 2013) is being applied to the Old Wives Lake planning process.

Provide information and encourage the implementation of beneficial land and water management practices to reduce non-point sources of nutrients and other contaminants to surface and groundwater.

- Provided policy development, technical advice and field delivery support to Ministry of Agriculture (MoA) on surface and groundwater protection related practices delivered in the Farm Stewardship Program. Delivered and supported North American Waterfowl Management Plan programming which included conservation and restoration of wetlands and upland habitats. Continued a strategic partnership with MoA which entered into five year contracts with watershed stewardship groups, to be the primary delivery agencies for MoA programs, to protect surface and groundwater from agricultural impacts.

Continue to partner with the Prairie Habitat Joint Venture to promote the conservation of wetland and associated upland habitat.

- Delivered and supported North American Waterfowl Management Plan (NAWMP) programming which includes conservation and restoration of wetlands and upland habitats, and inventory of intact and drained wetlands. Led development of revision of the Prairie Habitat Joint Venture NAWMP Implementation Plan.

Initiate work on a new provincial wetland policy.

- Completed a workplan and a draft Water Security Agency wetland strategy that builds capacity and outlines steps for development of a wetland policy.

Evaluate current minimum environmental flow objective for the Qu'Appelle River system.

- Channel cross-section surveys were completed upstream and downstream of the Qu'Appelle Lakes to determine fish habitat availability at 0.5 cubic metres per second.

Continue to annually assess impacts of water management on the Piping Plover population at Lake Diefenbaker and implement the conservation plan.

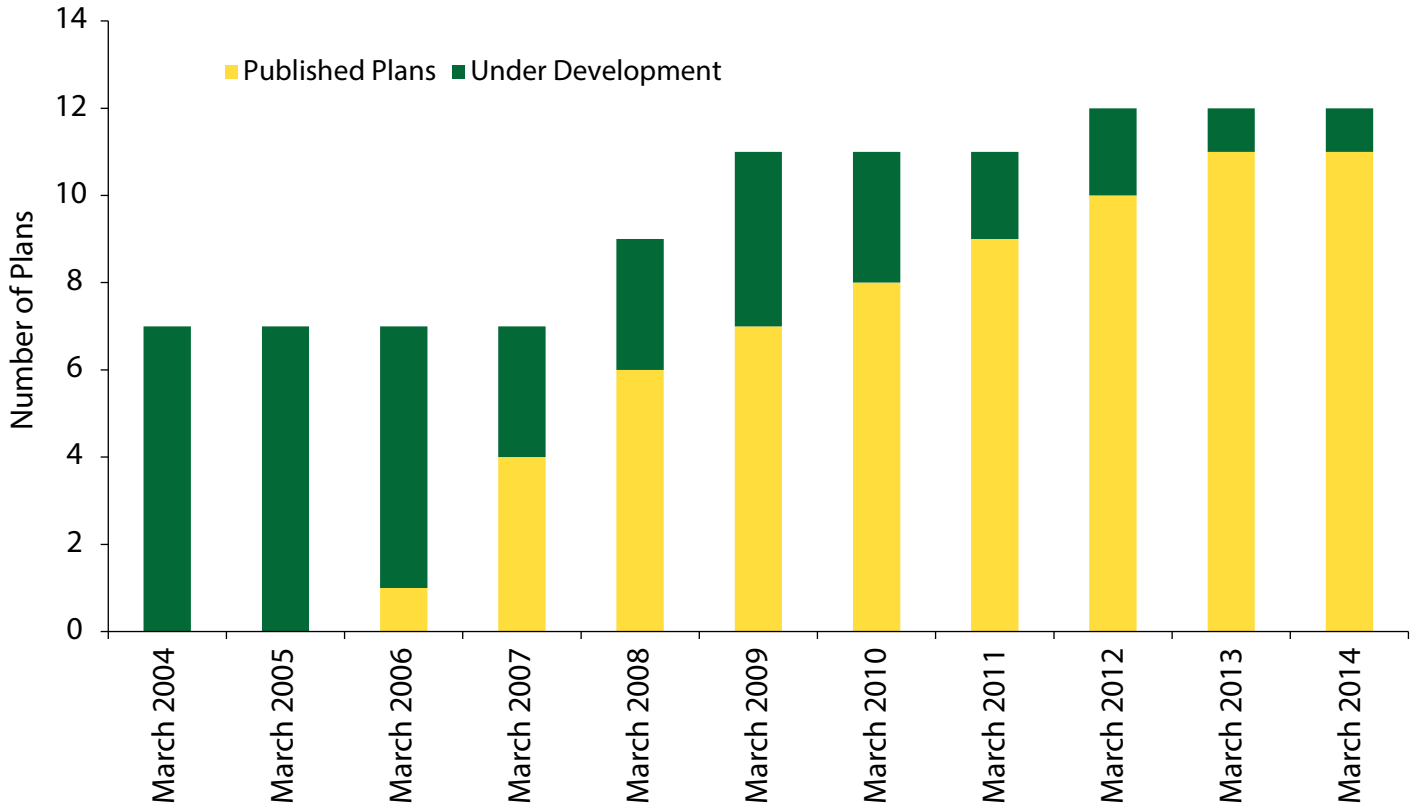
- Risk reduction activities reduced the number of flooded nests and enhanced Piping Plover productivity at Lake Diefenbaker.

Draft a strategy to reduce contamination risk posed to groundwater sources by abandoned water wells.

- Worked with Ministry of Agriculture to implement a water well decommissioning beneficial management practice for rural residents funded under the Growing Forward 2 framework. Water Security Agency (WSA) will provide ongoing support and encouragement for the 11 watershed stewardship groups to deliver as many decommissioning projects as possible in the 2013-2017 program.

Performance Measure & Results

Number of source water protection plans under development and published

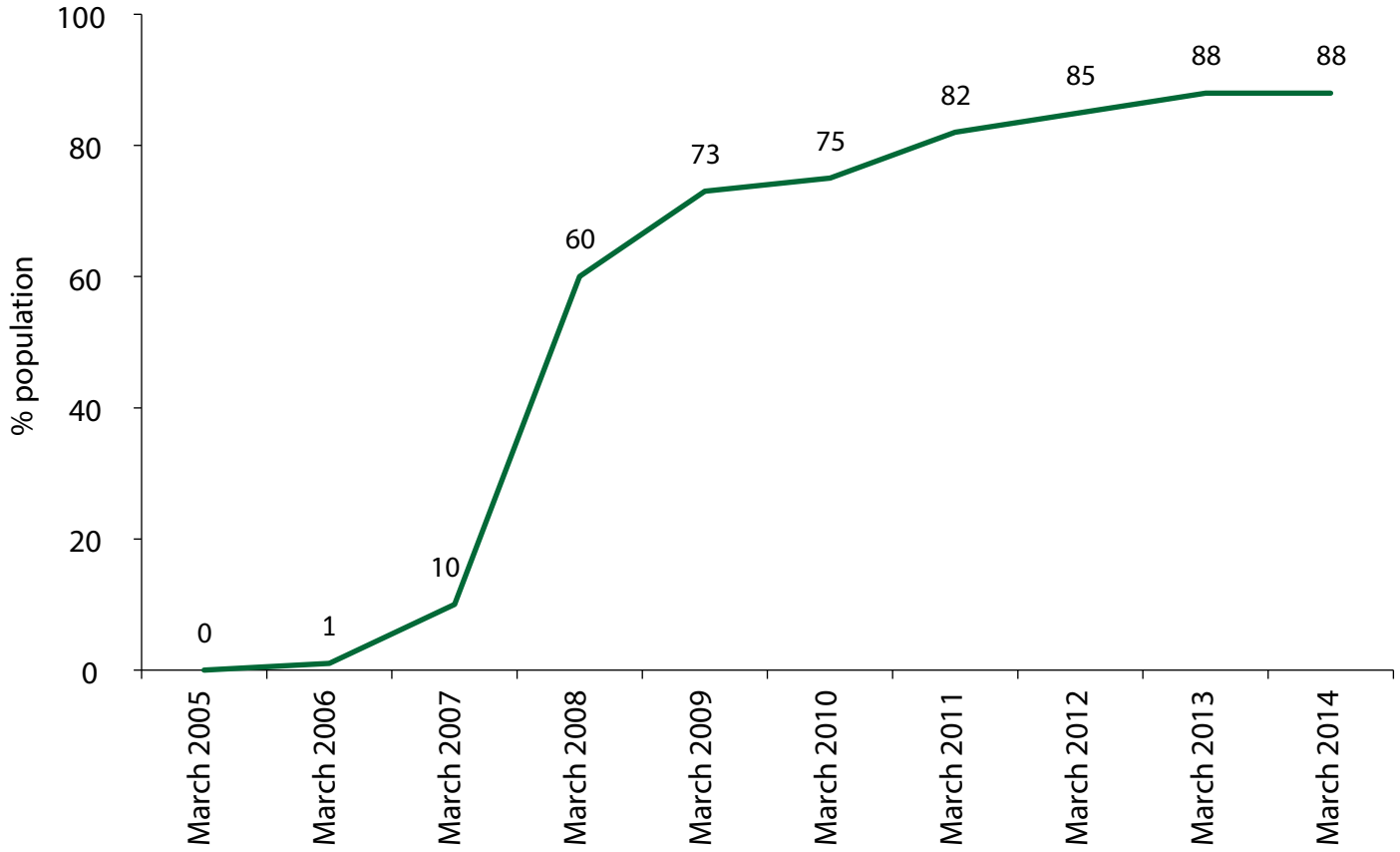


This measure is of interest to government as it provides an indicator of progress towards the protection of source water, thereby maintaining sustainable water supplies available to support our growth, a healthy environment and our quality of life. Source water protection plans are developed at a watershed or aquifer level by local advisory committee representatives, with watershed plans directed at protection of surface water and aquifer plans directed at groundwater. Completed plans set water management priorities and identify emerging water issues.

The Water Security Agency leads the planning process, directly influencing this measure. However, successful completion of source water protection plans is dependent on the commitment and ability of the local committee members to achieve a consensus on recommendations.

Originally, the Water Security Agency initiated seven plans and, as they were completed and staff became available, additional planning processes were initiated. The graph illustrates that the first plan was completed in year three, and the numbers reflect that planning processes are consistently coming to completion. Information used in this performance measure is derived from Water Security Agency program files.

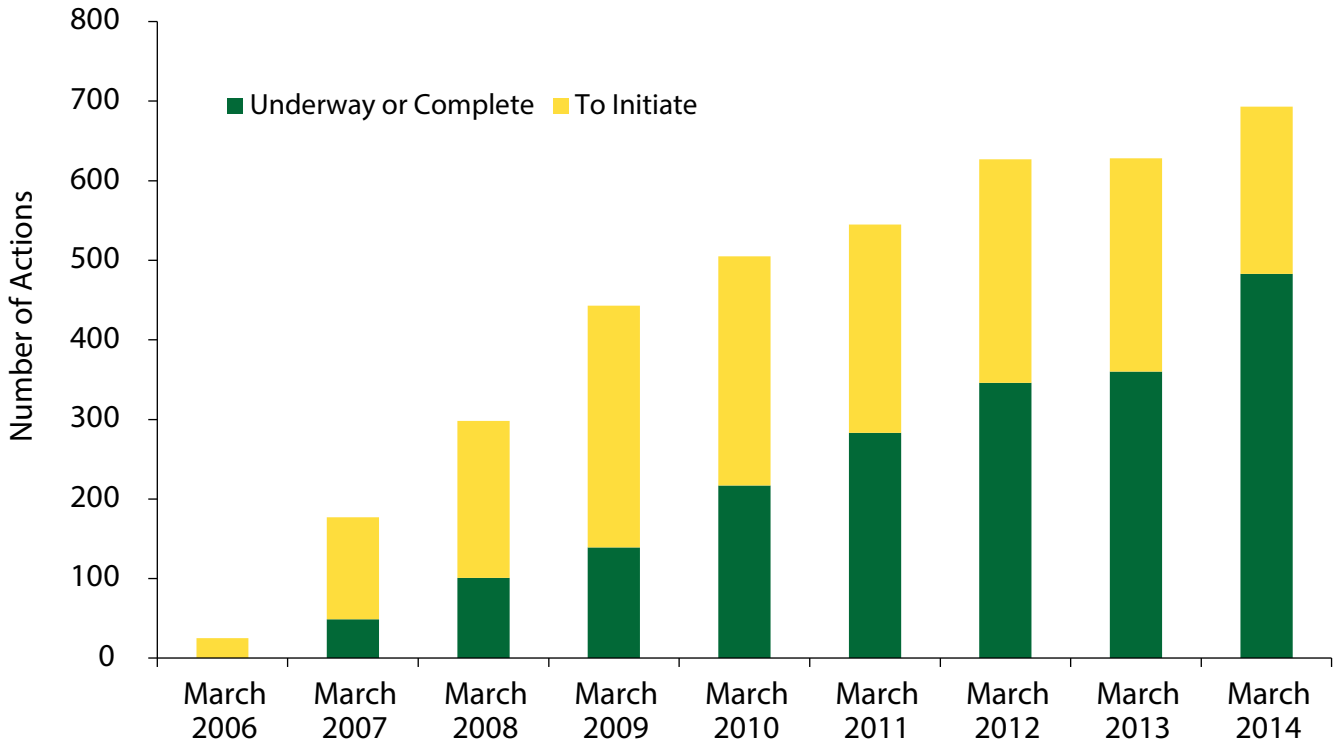
Proportion of provincial population covered by a completed source water protection plan



This measure provides meaningful context to the number of plans by adding the percentage of the population covered. The measure indicates that the Water Security Agency targeted early planning efforts at areas of highest population, and that the majority of the province's population (88 per cent) lives in an area where a planning process has been completed. Population data is derived from 2011 census of Canada data.

Performance Measure & Results

Total number of source water protection plan key actions underway or complete in the province



Source water protection plans identify key actions needed to protect source water. As actions are undertaken, the degree of protection of source waters within the watersheds and aquifers is expected to increase, and water threats minimized. Each key action specifies the organization(s) responsible for implementation. Local watershed stewardship groups lead or influence others to implement actions and submit reports on progress to the Water Security Agency, which are used to develop this measure. Of note, in past reports on this measure, some actions have been reported as "underway" when watershed stewardship groups have undertaken communication with the agencies responsible for actual implementation. As of this plan, this type of activity will mean actions are reported as "to initiate."

This measure illustrates the number of key actions underway or complete. Since the first plan was completed in 2006 through to March 2014, 483 watershed protection actions have been undertaken within the planning areas. As new plans are completed, additional actions are identified, thus the total number of actions has been increasing over time. In the graph above, the March, 2013 data has been revised since the Water Security Agency's 2012-13 Annual Report, capturing the new actions identified by the Lower Qu'Appelle Watershed source water protection plan that was published in March, 2013.

While the Water Security Agency provides funding and technical advice to the local watershed stewardship groups, it does not have direct control over completion of the majority of the identified actions and thus has limited influence over the measure.

Reduce risk of flood, drainage, and drought damages in the province

Key Actions & Results

Provide real time hydrometric information for emergency preparedness, flood mitigation, and flood response.

- Continued to provide real time information from Saskatchewan and Canada for forecasting, operation planning, flood preparedness and mitigation, and recreation planning. The data is used by the Water Security Agency, other governments, local user groups, recreation interests, and the general public.

Assess potential spring runoff and flood risk, forecast flood risk and notify potentially impacted communities of flood risk.

- Runoff forecasts were ongoing from the large prairie spring snowpack in 2013, the ice event in May on the Saskatchewan River System, the large rainfall flood events from southern Alberta, and throughout the development of the winter 2013-14 snowpack. The ongoing forecasts were used by the Water Security Agency's Regional Services staff as well as the Ministry of Government Relations to notify stakeholders of forecast flows and allow for appropriate flood management actions.

Due to high flood risk the Emergency Flood Damage Reduction Program was reactivated for 2013.

- The program provided advice and shared cost of permanent and temporary flood protection works, providing financial assistance to 453 clients including 87 communities, 33 rural municipalities, 7 First nations and 289 families.

Provide emergency advice on flood protection measures.

- Emergency advice was provided by Regional Offices in 2013 for flood protection. Clients were also referred to the Emergency Flood Damage Reduction Program, where the issues fit into the program.

Continue to work with provincial and federal partners to develop a long-term flood mitigation program.

- Saskatchewan continues to provide input to the federal government in the development of programming to protect existing flood prone development, and to identify the flood risk in areas of new development.

Update frequency analysis for hydrologic record for reviewed and published hydrometric station records.

- Frequency analyses of all hydrometric records were updated with critical 2011 published data (i.e. data that had gone through QA/QC process and accuracy checking).

Explore common approaches and partnership opportunities regarding flood forecasting with Alberta, Manitoba, and Canada.

- Initial discussions were held with water management staff in Alberta and Manitoba. Progress on this action will be continued in 2014-15.

Develop a strategy to ensure communities and the public have access to flood hazard information and are aware of potential flood risks.

- The development of a strategy is ongoing.

Develop a strategy to undertake a flood risk assessment of municipal drinking water and wastewater infrastructure.

- Work on this initiative is scheduled for 2016.

Complete construction cleanup relating to the constructed channel below Fishing Lake and assess options to convert emergency flood control berms around Fishing Lake to permanent works.

- The channel is substantially complete. Some construction clean-up work remains to be undertaken in 2014-15.
- An assessment of options to convert the emergency flood control berms into permanent works was completed during the year. Near year end, these options were reviewed with the Fishing Lake Watershed Association.

Investigate drainage complaints, make recommendations or orders as appropriate, and undertake required enforcement.

- During the past year, the Water Security Agency's Regional staff completed over 150 Requests for Assistance to resolve complaints and 9 Formal Complaints. With the wet year, there was a significant backlog at the end of the year in both Requests for Assistance and Formal Complaints.

Continue to support maintenance of organized drainage and channel clearing through the Water Control Program.

- The Water Security Agency provided grants to approximately 120 Rural Municipalities, 10 Conservation and Development Areas (CAAs) and 4 Watershed Associations (WA) for channel clearing. Approximately 75 CAAs, 5 WAs and 3 urban municipalities received grants to maintain flood control works.

Continue work with federal and provincial government, non-government, industry and research partners on climate change impacts to identify possibilities for adaptation.

- During the year, Water Security Agency completed several climate change projects it was conducting with funding from Natural Resources Canada.

Continue to support the Ministry of Agriculture's work to develop a coordinated provincial drought response plan that includes monitoring, preparedness, response, and recovery approaches.

- The Water Security Agency worked with the Ministry of Agriculture to draft Terms of Reference for the development of a coordinated drought response plan.

Ensure wastewater is effectively managed.

Key Actions & Results

Protect source water by ensuring effective treatment and management of wastewater, through inspections, monitoring, reporting, education and compliance follow-up for Water Security Agency regulated wastewater works.

- During 2013-14 the Water Security Agency performed 570 inspections of regulated wastewater works in the province. Three hundred and forty-nine locations with facultative lagoons submitted effluent quality samples as required, whereas 30 locations failed to meet the sample submission requirements. Another 175 locations do not discharge or employ disposal methods not requiring routine monitoring of effluent quality. The Water Security Agency follows up by means of inspection related comments or requirement as a means to ensure compliance with wastewater effluent quality requirements.
- The Water Security Agency has added wastewater system inspection compliance results in the annual report on the status of drinking water for the 2013-14 fiscal year.

Through Canadian Council of Ministers of the Environment effluent characterization – determine priority wastewater facilities requiring upgrading.

- Characterization has been essentially completed although additional supporting work will be required in future years. Eighty-eight sewage works have been identified as subject to Canada-wide Strategy for Municipal Waste Water Effluents in Saskatchewan.

Consider and, if needed, negotiate an Administration Agreement or Equivalency Agreement with Environment Canada for implementation of the federal Wastewater System Effluent Regulations by the Water Security Agency in Saskatchewan.

- Negotiation of an agreement with Environment Canada for administration of the Wastewater System Effluent Regulations was undertaken in 2013-14. These negotiations were nearing completion as of the end of the fiscal year.

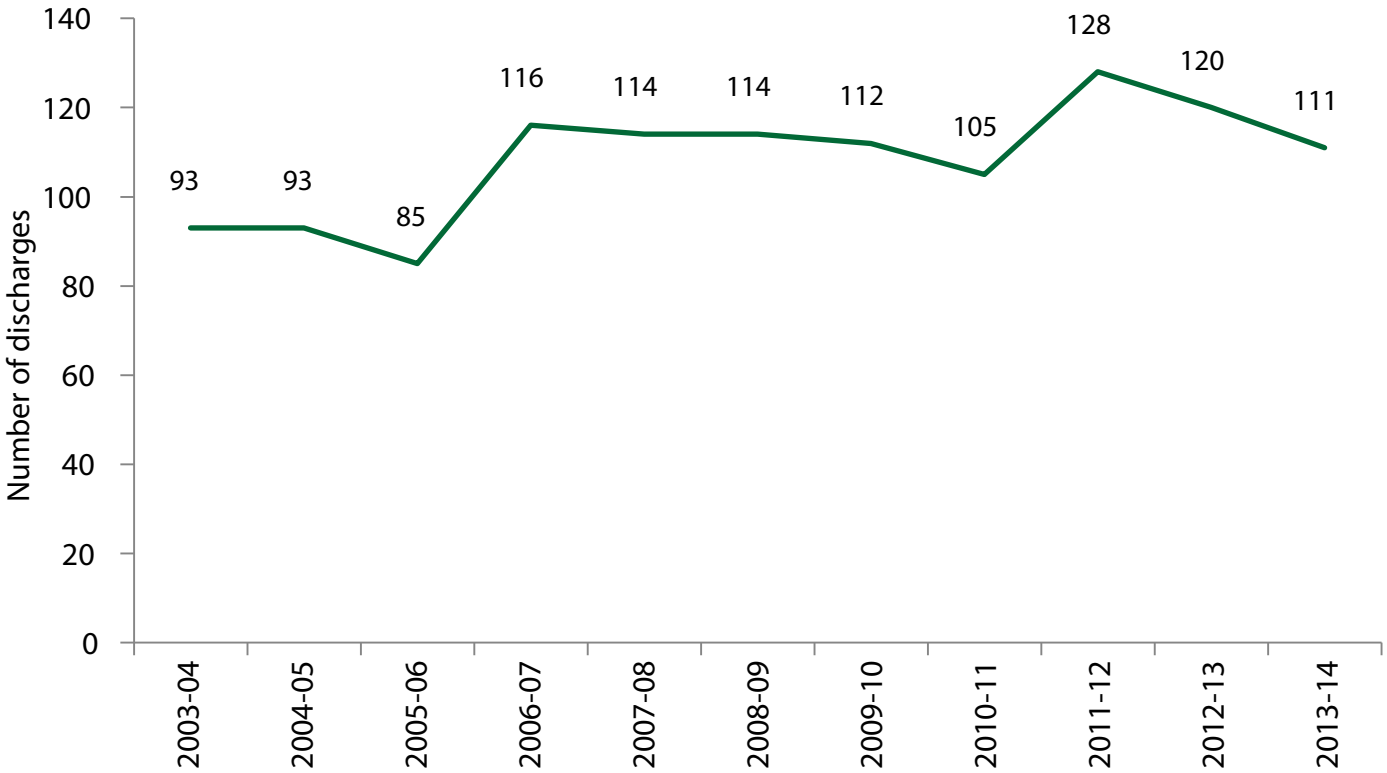
Conduct needed effluent characterization and aid sewage works owners in developing site specific discharge criteria to advance implementation of the Canadian Council of Ministers of the Environment Municipal Waste Water Effluent standards.

- Water Security Agency conducted research, modelling and mass balance studies for small category wastewater treatment plants in the province that are affected by the Municipal Waste Water Effluent (MWWE) strategy using all previously collected toxicity data, receiving stream water quality data including data from fish-bearing waters. Based on these studies, site-specific Effluent Discharge Objectives (EDOs) for selective wastewater parameters for the small category wastewater treatment plants were determined. The Water Security Agency intends to conduct additional monitoring of receiving streams and fish-bearing waters receiving effluent from small wastewater treatment plants to address statistical needs and confirm the site-specific EDOs developed for small category wastewater treatment plants. In future years further monitoring and research studies are planned as a means to support the development of site-specific EDOs for very small category wastewater treatment plants in the province that are affected by the Municipal Waste Water Effluent strategy.

Evaluate guidelines for on-site wastewater management and disposal, including an interjurisdictional review of on-site wastewater management practices.

- Review was initiated with work on septic tank waste management and land spreading. The evaluation will continue in 2014-15.

Sewage Effluent Discharges that Represent a Risk to Source Waters



The number of sewage effluent discharges that represent a risk to source waters is a direct indication of the current potential for source water contamination due to poor wastewater treatment, overloaded systems, or systems with failing infrastructure, etc. This measure is selected since it is the most direct measure of the number of potential significant contamination point sources affecting a range of water uses.

As of March 31, 2014, approximately 111 wastewater systems have been identified as having a discharge that may reach a surface water body and represent a risk to source waters under certain conditions. Additionally up to 88 waterworks systems may require compliance with pending Canada-wide Standards for Municipal Waste Water Effluent (MWWE), 71 of which may require compliance with the Wastewater System Effluent Regulations (WSER) developed pursuant to the federal *Fisheries Act*. The final number of wastewater systems, which must be managed to the MWWE and WSER standard, will be finalized once an administrative agreement is developed between the Water Security Agency and Environment Canada. Some of the wastewater systems subject to MWWE and WSER may also be included in the 111 wastewater systems that currently represent a risk to source waters.

Growth in Saskatchewan communities is also placing additional pressure on sewage infrastructure as some communities were at treatment and/or storage capacity. On an annual basis, Water Security Agency staff review the quality of effluent from each regulated sewage works. Reduction of ammonia and chlorine residual emissions within treated wastewater effluent, sewage works capacity or other treatment capability issues typically involve significant planning, investment and construction. Therefore, it can be expected that reductions in the number of works, which represent a risk to source waters, will be a time consuming process. Work to resolve problematic wastewater systems will continue for the foreseeable future.

Government Goal: Delivering responsive and responsible government

Work cooperatively with other governments and government agencies to ensure effective water management in Saskatchewan

Key Actions & Results

Establish provincial Deputy Ministers' Water Committee.

- Establishment of this committee was deferred until 2014-15.

Support the work of the Council of the Federation Water Stewardship working group to develop and implement strategies for national sharing of water information and data.

- Initiated posting of links to Saskatchewan water management information on the Infostream website developed for sharing of water information across the country.

Co-lead the Council of the Federation Value for Water and State of Private Wells Reports.

- Water Security co-lead preparation of two Council of Federation reports, A State of Private Drinking Water Wells in Canada: A Human Health Risk Perspective, and The Value of Water: How Information on the Value of Water Is Used in Water Management Decision Making across Canada.

Ensure all obligations under transboundary water sharing agreements, including the Prairie Provinces Water Board (PPWB), are met.

- All PPWB obligations were met in 2013-14. Work is progressing on amendments to the Master Agreement on Apportionment to revise the water quality objectives and to add a Schedule F to provide for the equitable sharing of ground water.

Work with the PPWB Committee on Groundwater to develop a groundwater sharing agreement. Specifically, continue to work with the PPWB through to Board Approval of Schedule F.

- Participated in preparing and reviewing a draft Schedule F for the Master Agreement on Apportionment. The draft Schedule was provided to the PPWB for approval and at year end was being reviewed by legal staff.

Review fish tissue data and monitoring program for PPWB sites. Develop PPWB management response protocol for water quality and fish tissue objective excursions.

- A comprehensive review of surface water quality objectives at 12 PPWB monitoring stations on the interprovincial borders was completed.
- Revised water quality objectives, including objectives for nutrients, are being reviewed by the PPWB with finalization expected in 2014-15. A management response protocol will be finalized once the objectives are finalized.
- Fish tissue data were recently summarized, detailed review has not yet occurred.

Continue to work with the International Souris River Board of the International Joint Commission and the Task Force.

- Participated in the ongoing Board activities, including declaration and oversight of flood operations under the 1989 Canada-United States Agreement for Water Supply and Flood Control in the Souris River Basin, and serving on a Task Force to develop a Plan of Study for International Joint Commission (IJC) approval and funding. Under the proposed Plan of Study, the Operation Plan annexed to the 1989 Agreement would be reviewed to determine if viable means exist to improve flood control benefits, through changes in the manner operation of the Souris River Project.

In compliance with the International Souris River Basin Agreement, continue to collect and assess water quality data from critical sites to determine ecosystem health status and trends and inform decision making.

- Water quality data were collected from Rafferty and Alameda Reservoirs, the Souris River upstream of Rafferty Reservoir, and two tributaries upstream to monitor for long-term changes in water quality.

Continue ongoing participation on the Canadian Council of Ministers of the Environment Water Quality Task Group that establishes national surface water quality guidelines.

- The Water Quality Task Group was wrapped up in 2013. The Water Security Agency continues to participate in water related initiatives such as MWWE coordination under the Water Management Committee.

Continue to represent the province on the Canadian Council of the Minister of Environment (CCME) Water Management Committee.

- During 2013-14, the Water Security Agency served as the co-chair for the CCME Water Management Committee. During 2013-14, a Water Security Agency representative also served as chair of the Federal-Provincial-Territorial Committee on Drinking Water.

Represent the province on the Mackenzie River Basin Board (MRBB) and lead the Alberta-Saskatchewan bilateral water management agreement negotiation process for the province to fulfill the obligations of the Mackenzie River Basin Transboundary Waters Master Agreement.

- The Water Security Agency continued to progress toward a bilateral agreement with Alberta through several meetings and significant technical and administrative work.

Represent Saskatchewan on the Adaptation Platform led by the Climate Change Impacts and Adaptation Division of Natural Resources Canada, and disseminate information from the Platform to provincial policy makers.

- The Water Security Agency is no longer on the National Resources Canada Adaptation Platform. This is now being led by the Ministry of Environment.

Continue to work cooperatively to administer the Manitoba-Saskatchewan Fishing Lake Channel Operating Agreement.

- It was not necessary to operate the Fishing Lake Channel in 2013-14.

Work with the International Joint Commission, local users and Montana officials to ensure the terms of the 1921 Order for the St. Mary and Milk Rivers are met.

- The Water Security Agency is responsible for water management and must direct the operation of the Saskatchewan reservoirs and diversions to ensure that Canada does not take more than its entitlement in any balance period. Saskatchewan met its obligations in 2013-14.

Work toward reconciliation in water management while meeting legal responsibilities for consultation and accommodation of first nations and Métis communities

Key Actions & Results

Work toward improved models for engagement with First Nations and Métis communities.

- A model is being designed which would use collaborative problem solving and interest-based processes for staff directly involved in duty to consult activities. A proposal for building staff knowledge is in draft form.

Once they have been approved by all parties, implement First Nations' flood claim agreements in the Qu'Appelle Valley.

- The flood claim agreements in the Qu'Appelle Valley were approved by all of the parties, although this process was not completed at Pasqua/Echo lakes until late in the fiscal year. The Crooked Lake structure was operated in 2013 in accordance with the settlement and the structure was transferred from Canada to Water Security Agency. While the settlement at Pasqua and Echo lakes was not complete until late in the year, thanks to the agreement of Muscowpetung and Pasqua First Nations, the Echo Lake structure was also operated during 2013.

Implement Water Management Agreements with Qu'Appelle Valley First Nations.

- The Water Security Agency has reached out to the First Nations involved in the Crooked Lake and Pasqua/Echo Water Management Agreements to invite the implementation of these Agreements and is awaiting a response.

Continue consultations with Fishing Lake First Nation on the Fishing Lake Emergency Channel Project.

- This action is in the middle of a five-year monitoring program. The Water Security Agency continues to monitor the impacts of the channel project and has consulted with Fishing Lake First Nation on the results and to help identify any concerns the community may have.

Engage First Nations, Métis and stakeholders in the Mackenzie River Basin in discussions on development of the Mackenzie River Basin Bilateral Agreement with Alberta.

- Completed phase 1 of the stakeholder engagement and Aboriginal duty to consult plan through many meetings in Aboriginal communities and significant information exchange with First Nations, Métis and stakeholders and will continue engagement in 2014-15.

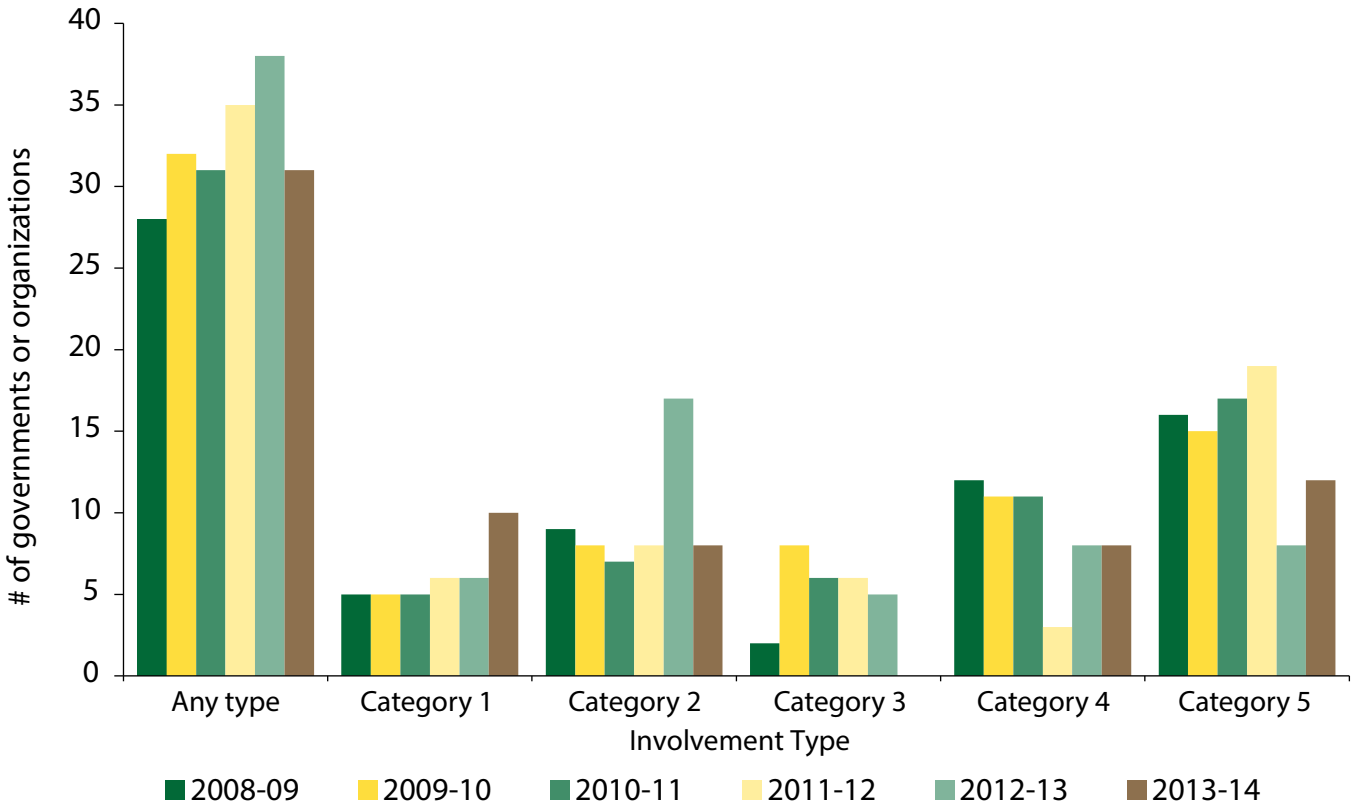
Continue to consult with First Nations and Métis communities where the Water Security Agency is planning work that may impact aboriginal or treaty rights.

- The Water Security Agency undertook pre-consultation and consultation processes with a number of First Nation and Métis Local governments regarding regulatory approvals or planning initiatives (e.g. Mackenzie River Basin Bi-lateral Agreement) in an attempt to identify potential adverse impacts to treaty or Aboriginal rights and to seek options for avoiding or mitigating such impacts.

Work with Source Water Protection Planning groups to engage and involve First Nations communities in activities in local and relevant watersheds.

- First Nations were engaged in development of the Lower Qu'Appelle Source Water Protection Plan, which was released in July, 2013.

Number of First Nations and Métis governments or organizations with whom the Water Security Agency is involved



First Nation and Métis interest in water availability and quality continues to grow and may result in conflicts over use, especially in areas with water shortages. Proactive relationship building will help reduce future conflicts and contribute toward positive water management alliances. The number of organizations and / or government bodies with whom the Water Security Agency, at a minimum, has a two-way dialogue, is a simple measure of the Water Security Agency efforts to build relationships. Water Security Agency staff report this information on an annual basis, and the comprehensive results are summarized here.

For this measure, the total number of governments or organizations with whom the Water Security Agency is directly involved is presented, along with a breakdown according to categories of involvement, as follows:

Any type: This is the total number of First Nations and Métis governments or organizations with whom the Water Security Agency is involved in any of the categories. The Water Security Agency may have more than one category of involvement with any given government or organization; therefore, this does not represent a sum of the five broken-out categories.

Category 1: Formal Province – First Nations / Métis agreements or negotiations: discussions underway or agreement in place.

Category 2: Formal consultations (activities specific to legal duty to consult requirements and including pre-consultation activities which may or may not result in formal consultations).

Category 3: Advisory board or committee participation (watershed / aquifer planning or infrastructure operation): representation on Water Security Agency -led planning or advisory committees.

Category 4: Community-based projects / initiatives: preliminary discussions, under development or already in place; Water Security Agency – First Nations / Métis projects.

Category 5: Dialogue / information exchange / relationship-building: informal discussions with government / organization representatives, including feedback received about Water Security Agency initiatives.

The measurement results indicate the Water Security Agency is directly involved with 31 First Nations and Métis governments or organizations in 2013-14.

Improve the effectiveness and efficiency of the Agency's legislation, policies and services

Key Actions & Results

Initiate development of modern and comprehensive water legislation.

- Continued internal work on development of modern and comprehensive water legislation and preparation for consultation.

Continue Environmental Code development on Water Security Agency-related activities.

- Water Security Agency supports Ministry of Environment's work on the Environmental Code. Phase 1 of the Environmental Code has not yet been enacted. Progress on the Work In and Near Water Chapter (Aquatic Habitat Protection Permits) is part of Phase 2, therefore progress will not begin until Phase 1 is complete.

Continue to conduct Lean reviews of programs and services to identify and implement gains in efficiency.

- Lean reviews were conducted on the Utility Bill Payment Process and IT Hardware Management process.

Continue strategic risk assessment as part of the annual planning cycle.

- The strategic risk assessment was completed at the beginning of the annual budget process.

Engage and inform stakeholders and the public regarding water issues

Key Actions & Results

Support creation of a Provincial Water Council with sector-based representation.

- Establishment of the Water Council has been deferred until 2014-15.

Review and revise guidance for application of precautionary drinking water advisories and emergency boil water orders for the Water Security Agency regulated waterworks.

- Revised guidelines have been drafted and were awaiting consideration as of the end of the fiscal year.

Annually report on progress in implementing the 25 Year Saskatchewan Water Security Plan.

- First report is published as Appendix A to this annual report.

Attract, retain and build professional staff by supporting employee development, stimulating and directing employee engagement and enabling employees to succeed

Key Actions & Results

Continue implementation and monitoring of the five year Human Resources Management Strategy to ensure consistency with the goals and principles of the Water Security Agency, the strategic direction for the public service provided by Executive Government and the delivery of human resource functions considers best practices with a focus on client service.

- Incorporated positions transferred from Ministries of Environment and Agriculture into the Water Security Agency's existing in-scope and management classification plan(s).
- Culture is critical to the Water Security Agency's ability to achieve the 25 Year Saskatchewan Water Security Plan initiatives. The Water Security Agency set out to develop its own culture sustainment plan in the spring of 2013. This initiative began by taking the shared Public Service 'Our Commitment to Excellence Framework' to 12 employee consultation sessions across the organization. A Culture Steering Committee was struck which reviewed the employee feedback and developed a Water Security Agency Culture Sustainment plan.

Implement phase 1 of the Performance Management project for management employees, including providing training and support, and monitoring participation.

- Implemented Performance Management Plans for a select group of senior management, implementing the Water Security Agency's core competency objectives.

Implement the on-boarding program for new employees, finalize the Recruitment Framework and ensure the Agency's recruitment activities are undertaken in accordance with best practices.

- The Recruitment framework is in place and reviewed annually.
- Staffing initiatives have been improved, whereby prior to employment offers, the staffing process and final selection is reviewed to ensure the best possible candidate for the position is recruited and to maintain consistency in hiring practices across the organization.

Continue support of staff training, skills enhancement, and career development programs as a priority and use employee training and development to support Corporate Succession Strategy initiatives.

- The Water Security Agency continued to support technical, interpersonal, supervisory, management and leadership development through numerous conferences, courses and seminars.

Continue implementation of the Occupational Health and Safety (OH&S) Framework which includes undertaking hazard and risk assessments for key corporate branches, ensuring the implementation of the OHS employee orientation process is consistent and integrated with the corporate on-boarding program, and that the implications of The Saskatchewan Employment Act (tabled December 4, 2012) are determined and integrated, as required, into the corporate OHS Program.

- Formal hazard assessment and risk analysis is conducted by the Water Security Agency's Environmental & Municipal Services Division on a semi-annual basis.
- Documented protocols for operating and maintaining equipment and works at the Water Security Agency's major dams are in place. Similar protocols will be included in operation, maintenance and surveillance manuals to be prepared in the next few years for all of the Water Security Agency's dams.
- Particular attention is paid to orientation of summer student staff owing to their inexperience and lack of knowledge of the Water Security Agency's facilities and field practices.
- Employees were informed of the changes to occupational health and safety rules contained in *The Saskatchewan Employment Act*.

2013 - 14 Financial Overview

The Water Security Agency ended the year with a $37,807,000 surplus. Revenues included a onetime $4,000,000 legal settlement and a payment from Agriculture and Agri-Food Canada of $24,150,000 related to transfer of 3 water control structures to the Water Security Agency. The Agency had a surplus of $2,889,000 related to flood relief projects. The surplus on regular operations, excluding these extraordinary events, was $6,768,000. Water power revenue was almost $4 million above budget, and that, along with under expenditures, contributed the majority of this surplus.

Expenses for regular operations at $35,642,000 were $6,139,000 below budget. This under expenditure was due to a number of factors including lower than budgeted expenses for enforcement, staff vacancies during the year impacting both salary expense and the work that could not be accomplished and redirection of staff to flood control programs resulting in under expenditure in other program areas.

The major revenue changes compared to 2012-13, besides the extraordinary items mentioned, were the increase in Water Power revenue of $1,608,000, and the budgeted increase in the operating grant from the General Revenue Fund of $3,346,000. The operating grant increase reflects additional investments in infrastructure rehabilitation and inclusion of the full year of funding for programs transferred to Water Security Agency.

Similarly, expenses for drinking and wastewater management increased from $1,116,000 to $4,787,000 reflecting the full year of inclusion of programs transferred from the Ministry of Environment, as well as some reorganization within the Water Security Agency.

Management's Responsibility for the Financial Statements

Management of the Water Security Agency is responsible for the accompanying financial statements. The Water Security Agency maintains a system of accounting and administrative controls to ensure that accurate and reliable financial statements are prepared and to obtain reasonable assurance that transactions are authorized, assets are safeguarded, and financial records are maintained.

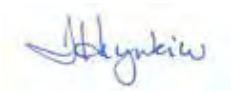
Management of the Water Security Agency prepares these statements in accordance with Canadian public sector accounting standards, using management's best estimates and judgement when appropriate.

The Water Security Agency's external auditor, Deloitte LLP, expresses an independent opinion on these statements. Their report provides the scope of their audit and states their opinion.

The Water Security Agency Board has approved these financial statements. The Annual Report, which includes these financial statements, is tabled in the Legislative Assembly.

On behalf of the Water Security Agency

Wayne Dybvig
President



Irene Hrynkiw, BComm, CMA
Executive Director, Corporate Services

WATER SECURITY AGENCY

FINANCIAL STATEMENTS

March 31, 2014

Deloitte LLP
2103 - 11th Avenue
Mezzanine Level
Bank of Montreal Building
Regina, SK S4P 3Z8
Canada

Tel: 306-565-5200
Fax: 306-757-4753
www.deloitte.ca

INDEPENDENT AUDITOR'S REPORT

To the Members of the Legislative Assembly of Saskatchewan

We have audited the accompanying financial statements of the Water Security Agency, which comprise the statement of financial position as at March 31, 2014, and the statements of operations and accumulated surplus, change in net financial assets, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Water Security Agency as at March 31, 2014, and the results of its operations, changes in net assets and cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Deloitte LLP

Chartered Accountants

May 15, 2014
Regina, Saskatchewan

Statement 1

WATER SECURITY AGENCY

STATEMENT OF FINANCIAL POSITION
AS AT MARCH 31

	2014	2013
		(Thousands of Dollars)
FINANCIAL ASSETS		
Cash	$ 81,253	$ 47,182
Accounts receivable	9,377	7,543
	90,630	54,725
LIABILITIES		
Accounts payable and accrued liabilities	6,892	9,193
Deferred revenue (note 5)	92	79
Employee future benefits (note 6)	1,014	1,149
Current portion of long-term debt (note 7)	2,026	1,204
Long-term debt (note 7)	18,128	11,299
	28,152	22,924
NET FINANCIAL ASSETS	62,478	31,801
NON FINANCIAL ASSETS		
Tangible capital assets (note 8)	312,785	305,601
Prepaid expenses and supplies	363	417
	313,148	306,018
ACCUMULATED SURPLUS	$ 375,626	$ 337,819

Commitments and contingencies (note 10)

See accompanying notes

On behalf of the Board:

Director

Statement 2

WATER SECURITY AGENCY

STATEMENT OF OPERATIONS AND ACCUMULATED SURPLUS
YEAR ENDED MARCH 31

	Budget (note 13)	2014	2013
			(Thousands of Dollars)
REVENUE			
Government of Saskatchewan			
- General Revenue Fund	$ 15,480	$ 15,480	$ 12,134
- Fish and Wildlife Development Fund	828	828	828
Water revenue	19,408	23,406	21,798
Contract revenue (Schedule 1)	695	558	863
Other (note 14)	1,170	30,288	1,789
	37,581	70,560	37,412
EXPENSES (Schedule 2)			
Corporate services	5,168	4,304	4,478
Regional services	7,311	7,114	8,667
Infrastructure management	6,359	4,487	3,877
Stewardship projects and administration	2,442	2,045	2,487
Watershed monitoring and assessment	2,560	2,741	1,939
Watershed planning	954	588	629
Hydrology services	2,193	2,825	2,651
Interjurisdictional water management and administration	1,909	974	845
Groundwater management	889	491	654
Drinking and wastewater management	5,903	4,787	1,116
Interest	843	499	306
Amortization of tangible capital assets	5,250	4,787	4,831
	41,781	35,642	32,480
Surplus (deficit) for the year before the following	(4,200)	34,918	4,932
Revenue related to flood relief projects (note 4)	-	19,286	5,767
Expenses related to flood relief projects (note 4)	-	16,397	7,798
Surplus (deficit) related to flood relief projects	-	2,889	(2,031)
Surplus (deficit) for the year	(4,200)	37,807	2,901
Accumulated surplus – beginning of year	337,819	337,819	334,918
Accumulated surplus – end of year	$333,619	$375,626	$ 337,819

See accompanying notes

WATER SECURITY AGENCY

STATEMENT OF CHANGE IN NET FINANCIAL ASSETS
YEAR ENDED MARCH 31

	Budget (note 13)	2014	2013
			(Thousands of Dollars)
Surplus (deficit) for the year	$ (4,200)	$ 37,807	$ 2,901
Acquisition of tangible capital assets	(12,582)	(11,979)	(13,376)
Amortization of tangible capital assets	5,250	4,787	4,831
Gain on sale of tangible capital assets	-	(16)	(6)
Proceeds on sale of tangible capital assets	-	24	25
	(11,532)	30,623	(5,625)
Net consumption (purchase) of prepaid expenses and supplies	-	54	(53)
Increase (decrease) in net financial assets	(11,532)	30,677	(5,678)
Net financial assets – beginning of year	31,801	31,801	37,479
Net financial assets – end of year	$ 20,269	$ 62,478	$ 31,801

See accompanying notes

Statement 4

WATER SECURITY AGENCY

STATEMENT OF CASH FLOWS
YEAR ENDED MARCH 31

	2014	2013
		(Thousands of Dollars)
CASH PROVIDED BY (USED IN)		
OPERATING ACTIVITIES:		
Surplus, for the year	$ 37,807	$ 2,901
Items not affecting cash:		
Amortization of tangible capital assets	4,787	4,831
Transfer of capital asset from Ministry of Agriculture	-	(4,178)
Gain on sale of tangible capital assets	(16)	(6)
Net change in non-cash balances relating to operations:		
Accounts receivable	(1,834)	(132)
Prepaid expenses and supplies	54	(53)
Accounts payable and accrued liabilities	(2,301)	(5,859)
Employee future benefits	(135)	269
Deferred revenue	13	5
	38,375	(2,222)
CAPITAL ACTIVITIES:		
Acquisition of tangible capital assets	(11,979)	(4,875)
Proceeds on sale of tangible capital assets	24	25
	(11,955)	(4,850)
FINANCING ACTIVITIES:		
Proceeds from loan payable	9,115	6,694
Principal portion of loan repaid in year	(1,464)	(782)
	7,651	5,912
Increase (decrease) in cash during the year	34,071	(1,160)
Cash – beginning of year	47,182	48,342
Cash – end of year	$ 81,253	$ 47,182

See accompanying notes

1. STATUS OF THE WATER SECURITY AGENCY

The Saskatchewan Watershed Authority (the Authority) was established on October 1, 2002, under the authority of **The Saskatchewan Watershed Authority Act, 2005**. The Authority is a Treasury Board Crown corporation within the meaning of **The Crown Corporations Act, 1993**.

The Saskatchewan Watershed Authority Amendment Act, 2012, continues the Saskatchewan Watershed Authority as the Water Security Agency (WSA) effective October 1, 2012. WSA is mandated to integrate all aspects of provincial water management to ensure water supplies support economic growth, quality of life and environmental well being. WSA supprts protection of drinking water, flood and drought response, and management of water supplies, water quality and aquatic habitat. WSA also owns and operates provincial dams and water supply channels.

2. SIGNIFICANT ACCOUNTING POLICIES

These financial statements have been prepared in accordance with Canadian public sector accounting standards. The following accounting standards are considered to be significant:

Tangible Capital Assets
Tangible capital assets are recorded at cost. Internally provided engineering and technical services are capitalized at charge out rates designed to recover salaries, benefits and overhead. The objective of this policy is to recognize the approximate value of design, supervision and administrative services rendered by WSA employees on construction projects. As well, WSA capitalizes interest expense on debt relating to specific construction projects. Amortization of assets under development will commence once they are operational and available for use. Charges for amortization are calculated at the following annual rates:

Tangible Capital Assets	Method	Rate
Buildings and leaseholds	straight-line	4%
Maintenance equipment	diminishing balance or straight-line, as appropriate	15% to 30%
Office equipment	straight-line	10% to 50%
Water infrastructure	straight-line	1.67% to 5%

Government of Saskatchewan Grants
Under the authority of Section 27 of **The Saskatchewan Watershed Authority Act, 2005** WSA receives grants from the General Revenue Fund out of monies appropriated by the legislature or authorized by Order in Council. These grants are recorded as revenue when received or receivable and are used to fund grant programs, water management infrastructure rehabilitation and operations.

Revenue Recognition
Contractual revenue received by WSA for specific purposes is recognized as revenue in the year in which the related expenses are incurred. Water revenue is recognized as revenue in the year it is consumed. Other revenue includes: licenses, fees, permits, interest income, a service contract with SaskWater, a legal settlement and a transfer from Agriculture and Agri-Food Canada. These revenues are recognized in the year they are earned.

2. SIGNIFICANT ACCOUNTING POLICIES continued

Grants to Clients
Grants provided to clients for a variety of programs are recorded as an expense to WSA if the final approval for the grant payment was made during the year. Where WSA enters into contractual agreements for project construction under various assistance programs, expenses are accounted for on an accrual basis.

Employee Future Benefits
WSA administers a benefit relating to a retirement allowance which is paid to eligible employees upon retirement. WSA has adopted the accrual method of accounting for this benefit whereby the cost of providing the benefits is recorded when the related services of employees are performed. WSA's employees participate in the Capital Pension Plan which is a multi-employer plan. WSA's contibutions to the pension plan are expensed as incurred.

Measurement Uncertainty
The preparation of financial statements in conformity with Canadian public sector accounting standards requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenditures during the reporting period. Significant areas requiring the use of management estimates relate to the useful lives of assets for amortization periods and employee future benefits.

Financial Instruments
All financial instruments are initially recognized at fair value. The fair value of a financial instrument is the amount of consideration that would be agreed upon in an arm's-length transaction between knowledgeable, willing parties who are under no compulsion to act.

3. NEW REPORTING STANDARD

The following new standard, effective for annual periods beginning on or after March 1, 2013, has been applied in preparing these financial statements:

- PS 3450 – Financial Instruments

The prospective adoption of this standard had no material impact on the financial statements. The Statement of Re-measurement Gains and Losses has been omitted as there were no relevant transactions to report. Note 15 contains disclosures in relation to this Standard.

4. FLOOD RELIEF PROJECTS

Flooding during 2011 was unprecedented in its magnitude, extent and duration across the agricultural zone of Saskatchewan. An "Emergency Flood Damage Reduction Program" (EFDRP) was implemented by the Province to provide, on a cost-shared basis, funding to assist individuals and communities with flood preparation. WSA was allocated the funds to lead this program on behalf of the Province. As well, WSA was allocated funds from Aboriginal Affairs and Northern Development Canada to assist First Nations to combat flood damage. WSA is also leading the work, on behalf of the Province, related to long-term solutions to flooding at Fishing and Waldsea Lakes. Flood issues were ongoing in 2012 and 2013 and EFDRP funding was also received by WSA in 2013-14.

WSA recognized the following funding for flood relief initiatives:

	(Thousands of Dollars)	
	2014	2013
General Revenue Fund - Emergency Flood Damage Reduction Program	$17,000	$5,000
General Revenue Fund - Fishing Lake Maintenance of Berms	-	500
Aboriginal Affairs and Northern Development Canada	2,286	267
	$19,286	$5,767

WSA recognized the following expenses for flood relief initiatives:

	(Thousands of Dollars)	
	2014	2013
Emergency Flood Damage Reduction Program	$ 12,332	$ 4,228
Fishing and Waldsea Lakes	1,673	3,570
Aboriginal Affairs and Northern Development Canada	2,392	-
	$ 16,397	$ 7,798

5. DEFERRED REVENUE

The balance that remains in deferred revenue at year-end relates to funding WSA has received for various projects that are not yet completed.

	2014	2013
	(Thousands of Dollars)	
Balance, beginning of year	$ 79	$ 74
Contractual revenues received	50	79
Recognition of prior year deferred revenue	(37)	(74)
Balance, end of year	$ 92	$ 79

6. EMPLOYEE FUTURE BENEFITS

The amounts related to the defined benefit retiring allowance are as follows:

	2014	2013
		(Thousands of Dollars)
Accrued benefit liability	$ 1,014	$ 1,149
Benefits paid during the year	167	41
Net expense	32	310

The significant actuarial assumptions adopted in measuring WSA's accrued benefit liability at March 31 are:

	2014	2013
Discount rate	3.60%	3.40%
Inflation rate	2.50%	2.50%
Average remaining service life	10.9 years	10.4 years

7. LONG-TERM DEBT

	2014	2013
		(Thousands of Dollars)
Conexus Credit Union 2006 - ten year loan bearing interest @3.98% per annum, due March 2021.	$ 1,999	$ 2,242
Bank of Montreal - ten year loan bearing interest @3.40% per annum, due March 2022.	3,400	3,764
TD Commercial Banking - ten year loan bearing interest @2.65%, due November 1, 2022	5,900	6,497
National Bank of Canada - ten year loan bearing interest @3.51%, due December 4, 2023	8,855	-
Total Debt	20,154	12,503
Less: Current portion of long-term debt	2,026	1,204
	$ 18,128	$ 11,299

Long-term debt repayments in each of the next five years are as follows:

	(Thousands of Dollars)
2015	$ 2,026
2016	2,093
2017	2,163
2018	2,236
2019	2,311
Thereafter	9,325
	$ 20,154

8. TANGIBLE CAPITAL ASSETS

	2014			2013
				(Thousands of Dollars)
	Cost	Accumulated Amortization	Net Book Value	Net Book Value
Land	$ 5,155	$ -	$ 5,155	$ 5,155
Buildings and leasehold improvements	1,846	909	937	1,064
Maintenance equipment	3,494	2,582	912	830
Office equipment	2,528	1,941	587	731
Water infrastructure	412,382	107,188	305,194	297,821
	$ 425,405	$ 112,620	$ 312,785	$ 305,601

Included in the tangible capital assets are assets under construction worth $7,027,000 (2013 - $11,622,000).

9. GRANTS TO CLIENTS

Included in expenses are grants or assistance provided to various persons and organizations to carry out a variety of programs administered by WSA. Particulars of these grants, by program, are as follows:

	2014	2013
		(Thousands of Dollars)
Flood Control and Drainage	$ 1,184	$ 1,287
Emergency Flood Damage Reduction Program	10,643	2,875
Toilet Replacement Rebate	(2)	920
Stewardship - Watershed Grants	1,071	1,000
Stewardship - Water Quality	117	176
	$ 13,013	$ 6,258

10. COMMITMENTS AND CONTINGENCIES

Contractual Commitments

As of March 31, 2014, WSA has outstanding commitments of $5,460,484 (2013 - $5,235,358) for construction contracts, consulting agreements, software licensing, watershed funding agreements and other services. Within various contractual agreements, WSA has committed to provide in-kind services. If contracts were terminated, WSA's only liability would be for actual costs incurred to date.

Leases

WSA has entered into various operating lease agreements with the following minimum lease payments:

	(Thousands of Dollars)
2015	$ 1,395
2016	1,305
2017	1,241
2018	1,292
2019	1,296
Thereafter	2,351
	$ 8,880

Litigation

Water Security Agency is party to eleven (2013 - six) lawsuits related to various water management issues of which the outcome cannot be determined, therefore, no amounts have been allowed for settlement in these statements.

11. RELATED PARTY TRANSACTIONS

Included in these financial statements are transactions with various Saskatchewan Crown corporations, ministries, agencies, boards and commissions related to the Authority by virtue of common control by the Government of Saskatchewan and non-Crown corporations and enterprises subject to joint control or significant influence by the Government of Saskatchewan (collectively referred to as "related parties").

Routine operating transactions with related parties are settled at prevailing market prices under normal trade terms. These transactions and amounts outstanding at year end, are as follows:

	2014	2013
	(Thousands of Dollars)	
Water, contract and other revenue	$ 22,851	$ 20,375
Expenses	3,704	3,917
Accounts receivable	5,329	4,742
Accounts payable	86	147

Details of amounts and transactions due to and from related parties and the terms of settlement are described separately in these financial statements and the notes thereto.

12. PENSION PLAN

WSA's employees participate in the Capital Pension Plan (the Plan), which is a defined contribution pension plan. WSA's contributions to the Plan include making regular payments into the Plan. The total amount paid into the Plan for 2014 was $936,087 (2013 - $948,734).

13. BUDGET FIGURES

The budget figures are presented for comparison purposes. WSA's Board of Directors approved the 2014 budget on March 7, 2013.

14. OTHER REVENUE

In the 2013-14 fiscal year, structures along the Qu'Appelle River were transferred to WSA from the Agriculture and Agri-Food Canada (Federal Government). WSA received one-time funding of $24,150,000 to compensate for continuing maintenance and upgrades to these structures, indefinitely. This funding has been included in Other Revenue in 2013-14. The fair value of the structures as at March 31, 2014 was $nil.

The WSA received a $4,000,000 legal settlement during the year, which has been included in Other Revenue.

15. FINANCIAL INSTRUMENTS

WSA's financial assets consists of cash and accounts receivables. Financial liabilities consist of accounts payable, accrued liabilities and long-term debt.

Credit risk
WSA is exposed to credit from the potential non-payment of accounts receivable. The carrying amount of accounts receivable represents WSA's maximum credit exposure which, as of March 31, 2014 is $9,377,000 (2013 - $7,543,000). The allowance for doubtful accounts is $nil (2013 - $nil).

Liquidity risk
Liquidity risk is the risk that WSA will not be able to meet its financial obligations as they become due. WSA monitors its cash balances and cash flows from operations to meet its requirements.

Interest rate risk
WSA is exposed to interest rate risk on its fixed rate long-term debt. The fixed rate instruments subject WSA to a fair value risk due to interest rate fluctuations in the market.

WATER SECURITY AGENCY
Schedule 1 - Contract Revenue

Year Ended March 31

	2014	2013
	(Thousands of Dollars)	
Canadian Wildlife Service	$ 143	$ 143
Environment Canada	159	214
Wildlife Habitat Canada	100	90
Natural Resources Canada	156	182
Provincial Council of Agriculture Development and Diversification Boards of Saskatchewan Inc.	-	49
Other	-	185
	$ 558	$ 863

WATER SECURITY AGENCY

Schedule 2 - Expenses by Program
Year ended March 31

	Corporate services	Regional services	Infrastructure management	Stewardship projects & administration	Watershed monitoring & assessment	Watershed planning	Hydrology services	Interjurisdictional water management & administration	Groundwater management	Drinking & wastewater management	Interest & amortization	**2014 Total**	2013 Total
													(Thousands of Dollars)
Salaries and benefits	$ 4,764	$ 4,186	$ 3,304	$ 424	$ 1,779	$ 443	$ 1,335	$ 496	$ 449	$ 3,133	$ -	**$ 20,313**	$ 16,936
Travel and other staff costs	382	288	263	63	200	37	177	58	17	303	-	**1,788**	1,492
Professional services	549	98	304	234	253	15	112	34	26	81	-	**1,706**	2,207
Office supplies	1,069	89	50	7	29	6	20	19	7	54	-	**1,350**	1,038
Materials	1	8	145	1	49	18	30	-	4	18	-	**274**	254
Contractual services	45	296	518	-	18	20	753	185	-	333	-	**2,168**	1,205
Cash grants	-	1,182	19	1,187	1	-	-	-	-	-	-	**2,389**	3,383
Salary allocations	(3,717)	487	(135)	115	220	21	472	116	(26)	831	-	**(1,616)**	(1,211)
Other expenses	1,211	480	19	14	192	28	(74)	66	14	34	5,286	**7,270**	7,176
Total	$ 4,304	$ 7,114	$ 4,487	$ 2,045	$ 2,741	$ 588	$ 2,825	$ 974	$ 491	$ 4,787	$ 5,286	**$ 35,642**	$ 32,480

For More Information

More detailed information can be obtained by visiting the Water Security Agency's website at www.wsask.ca calling its head office in Moose Jaw at 306-694-3900, or contacting the water inquiry line toll free at 1-866-SASK-H20 (1-866-727-5420) or saskH20.ca.

Appendix A - Annual Report on State of Drinking Water Quality in Saskatchewan

Table of Contents

Note: An electronic copy of this document is available online at: www.wsask.ca and www.SaskH2O.ca.

Introduction

This annual report presents the activities and results of various agencies in managing drinking water in Saskatchewan for the fiscal year ending March 31, 2014. It reports to the public and elected officials on public commitments made and other key accomplishments of ministries and agencies engaged in drinking water management in Saskatchewan.

This is the 12th Annual Report on the Status of Drinking Water in Saskatchewan. This report is intended to inform residents and elected officials of Saskatchewan of the status of drinking water quality, waterworks infrastructure, source water protection and water-related items and measures in the province over the April 1, 2013 to March 31, 2014 period. The report is a legislated requirement under *The Environmental Management and Protection Act, 2002* and demonstrates the commitment of agencies and ministries engaged in drinking water management to effective public performance reporting, transparency and accountability to the public.

The 2013-14 Annual Report covers the same key measures related to the status of drinking water provided in previous years however the format has been change to reduce duplication with other reports on water. There have been no major changes in drinking water related regulations or policy in 2013-14 in comparison to the 2012-13 fiscal year.

Background on Drinking Water

Safe drinking water is a vital component in the protection of public health and disease prevention and therefore essential for the health and well-being of Saskatchewan's citizens. High quality water is important for maintaining natural ecosystems and the species that depend upon them, ensuring the productivity of industry, sustaining commerce and for sustaining growth in the province. The quality of drinking water, the condition of systems that produce it and the protection of source waters remains an important public health, environmental and growth related issue in Saskatchewan at the present time and for the future.

The report outlines the roles, responsibilities and resources of agencies and ministries involved in water management, as well as the regulatory framework and activities undertaken by the Government of Saskatchewan to manage drinking water. The report also discusses operator certification, drinking water quality monitoring, wastewater management, source protection, information management systems and public education initiatives, which are key actions and indicators of performance in improving drinking water quality in Saskatchewan. This report is completed annually in accordance with recommendation 26(d) of the "*Report of the Commission of Inquiry into matters relating to the safety of the public drinking water supply in the City of North Battleford, March 28, 2002*." Recommendation 26(d) noted "That *The Environmental Management and Protection Act* be amended to: (d) provide that the unit produce an annual report to the legislature on the state of drinking water quality in the province." The "Report of the Commission of Inquiry" is available online at: www.northbattlefordwaterinquiry.ca/inquiry/inquiry.htm.

The report includes contributions from the Water Security Agency, Saskatchewan ministries of Environment, Health, Government Relations and Agriculture, as well as material provided by the Water Security Agency and SaskWater. The Water Security Agency's Environmental and Municipal Management Services Division compiled the report.

An Overview of Drinking Water Management and Water Management Agency Roles in Saskatchewan

Since the waterborne disease outbreaks of May 2000, in Walkerton, Ontario and spring 2001 in North Battleford, Saskatchewan, the Government of Saskatchewan has heightened and focused efforts to improve drinking water supplies and protect source waters in the province. The intent of these efforts is to provide safe drinking water. These actions are also intended to reassure the citizens of the province that government is helping to ensure our drinking water is safe.

Several ministries and agencies are involved in the governance and protection and/or provision of drinking water supplies and source waters in Saskatchewan at various times over the 2013-14 fiscal year including the Water Security Agency, the ministries of Environment, Health, Government Relations, Agriculture, Regional Health Authorities and SaskWater.

The Water Security Agency is a Treasury Board Crown Corporation, which was created in October 2012 by bringing together all programs of the former Saskatchewan Watershed Authority; drinking and waste water, aquatic habitat protection permitting, and water quality management programs of the Ministry of Environment; M1 Canal and East Side Pump Plant, and water pumping equipment rental program of the Ministry of Agriculture and limited scope pipelines from Ministry of Health. The Water Security Agency is responsible for managing the water supply, protecting water quality, ensuring safe drinking water, managing dams and water supply channels, reducing flood and drought damage and providing information on water. The Agency works to integrate all aspects of provincial water management to ensure water supplies support economic growth, quality of life and environmental well-being.

The following is a summary of the major roles, priorities and actions of each of the government ministries and agencies involved in drinking water management and source water protection.

Water Security Agency

The Water Security Agency was formed in October 2012 and has assumed the primary role of the former Saskatchewan Watershed Authority and the Saskatchewan Ministry of Environment in water management.

The role of the Water Security Agency:

- leads ongoing planning, implementation and reporting associated with drinking water governance and management to which all participating ministries and agencies contribute;
- implements, inspects and regulates compliance for 571 licensed municipal waterworks, 73 permitted pipelines, 41 regional or provincial park waterworks, 88 other permitted waterworks (such as trailer courts, institutions and Hutterite colonies), and 597 wastewater facilities under *The Water Regulations, 2002*. There are also 27 industrial waterworks bringing the total to 800 waterworks regulated under *The Water Regulations, 2002;*
- issues permits for construction and operation of water and wastewater works;
- develops policies, protocols, water quality standards and guidelines to support protection of drinking water and implementation of *The Water Regulations, 2002*;
- liaises with the Operator Certification Board (OCB);
- manages the Water Security Agency's / Ministry of Environment's drinking water information system, Environmental Management System (EMS) that houses water quality and inspection data for all agency/ministry regulated waterworks and wastewater works in the province;
- monitors surface water quality at primary surface water quality stations across the province;
- manages the www.SaskH2O.ca website that supplies a broad range of drinking water related information gathered from water management authorities within the province.
- monitors source (surface/ground) water;
- provides flood forecasting and identifies flood susceptible areas;
- leads watershed and aquifer planning;
- owns, operates and maintains water management infrastructure;
- provides waterworks source water approval (except municipal);
- allocates ground and surface water for use; and
- develops and provides State of Watershed Reporting.

Saskatchewan Ministry of Environment

- implements, inspects and regulates compliance for 27 industrial waterworks and related wastewater facilities under *The Water Regulations, 2002*; and
- issues permits for construction and operation of water and wastewater works at industrial facilities.

Saskatchewan Ministry of Government Relations

- provides financial assistance for water infrastructure through the Canada-Saskatchewan Building Canada Fund-Communities Component (BCF-CC), the Canada-Saskatchewan Building Canada Fund-Major Infrastructure Component (BCF-MIC), the Canada-Saskatchewan Provincial/Territorial Base Fund (PT Base), the Saskatchewan Infrastructure Growth Initiative (SIGI) and the Northern Water and Sewer Program for 2013-14;
- legislates and regulates pricing policies and capital investment strategies for municipal waterworks; and
- legislates and regulates municipal protection of water sources through planning bylaws.

Saskatchewan Ministry of Health/Health Regions

- inspects for compliance at semi-public waterworks and certain other waterworks as required by *The Health Hazard Regulations*;
- manages data systems for Public Health Inspectors and laboratory information;
- analyses water through the Saskatchewan Disease Control Laboratory; and
- provides advice and addresses waterborne illnesses.

Saskatchewan Ministry of Agriculture

- has responsibility under *The Agricultural Operations Act* for intensive livestock provisions;
- administers *The Irrigation Act, 1996* and provides water- related advice;
- provides pesticide (applicator) licenses under *The Pest Control Products (Saskatchewan) Act*;
- conducts research, demonstrations and technology transfer;
- provides advice on farm water supplies; and
- coordinates Environmental Farm Planning (Federal/Provincial Growing Forward 2 Agreement).

SaskWater

- a commercial Crown water utility that provides the following water services in Saskatchewan for municipalities, industries and First Nation communities:
  - potable water supply;
  - non-potable water supply;
  - wastewater treatment and management;
  - certified operation and maintenance (COM) for customer-owned systems;
  - project management;
  - water leak detection;
  - water and wastewater training; and
  - remote monitoring.

The Water Security Agency, the Ministry of Health and the individual Regional Health Authorities continue to deliver water and wastewater programming and governance through a system of centralized planning, protocol and standards development and regionalized inspection and compliance services.

At the end of the 2013-14 fiscal year, the Water Security Agency's (formerly Ministry of Environment) staff complement totaled 32.6 full time equivalents (FTEs), including three FTEs devoted primarily to water information management, for delivery of all aspects of the Agency's drinking water and wastewater management activities.

The Ministry of Health's Saskatchewan Disease Control Laboratory has 17.5 FTEs that are dedicated to water testing and the accreditation program in support of the Safe Drinking Water Strategy. Health Region Public Health Inspectors, Medical Health Officers and Public Health Nurses also play a role in water related activities (i.e. semi-public water supply inspection, issuance of Emergency Boil Water Orders (EBWO) and water borne disease investigations).

The Ministry of Agriculture has ten FTEs that deliver intensive livestock inspection and regulatory approval services to ensure protection of water resources from intensive livestock operations. Two additional full time positions provide

technical assistance to address environmental issues related to livestock development. Ministry of Agriculture staff continues to participate in the Water Security Agency's Aquifer and Watershed Program planning activities. The Ministry also develops and distributes management and technology information for conservation and grazing and crop production that reduce and/or minimize impacts to water resources. Three FTEs deliver pesticide regulatory services.

The Pest Control Products (Saskatchewan) Act and regulations require any individual who uses or applies a pesticide, as part of their duties or, for commercial gain to hold a valid pesticide applicator license. An applicant for a pesticide applicator license must pass a pesticide applicator course. This training is valid for five years; however, the applicator license is renewed on an annual basis.

Pesticide education and applicator training and certification are recognized as a key tool in risk reduction. Education helps mitigate the risks associated with pesticide application and results in the more responsible use of pesticides. The responsible use of pesticides helps preserve the natural environment while keeping it safe for the use and enjoyment of the general public.

In Saskatchewan, the Saskatchewan Institute of Applied Science and Technology (SIAST) offers pesticide applicator courses. There are currently 1,845 licensed pesticide applicators in the province.

The Ministry of Agriculture administers *The Irrigation Act, 1996*. The legislation ensures soils and water are suitable for sustainable irrigation. Irrigation soils, water quality and water tables are monitored for sustainability.

The water-related programming by the Ministry of Government Relations is mainly provided through centralized policy development and program delivery services.

Key partners outside the provincial government include the federal government through the Building Canada Fund, Federal Gas Tax Program, participants in the Growing Forward 2 Agreement, municipalities and other waterworks owners, the Saskatchewan Urban Municipalities Association (SUMA), the Saskatchewan Association of Rural Municipalities (SARM), the Saskatchewan Water and Wastewater Association (SWWA) and the Operator Certification Board (OCB). SWWA and the OCB have been instrumental in advancing waterworks operator certification in the province. The OCB is appointed by government, but operates at arm's length in considering the qualification and standing of water and wastewater works operators in the province. Key stakeholders are consulted on a periodic basis to aid in the ongoing development and delivery of drinking water and wastewater related programming and activities of the Government of Saskatchewan.

The following sections of the report provide information on the status of drinking water in Saskatchewan during 2013-14. Further information on drinking water quality is available on the SaskH2O website, www.SaskH20.ca, and on the Water Security Agency's website at: www.wsask.ca. Additional detailed background information regarding drinking water quality in Saskatchewan is available at www.SaskH2O.ca/news.asp, and www.SaskH2O.ca/MyDrinkingWater.asp. The following sections also report on the significant actions and the performance levels in achieving key indicators for the improvement in drinking water and related protection and enhancement measures.

Transparency regarding the status of drinking water is intended to improve trust in drinking water supplies and the waterworks systems that produce it. Public reporting is intended to further the accountability of the ministries and agencies that manage and govern drinking water in the province.

Progress in 2013-14

This section presents the key results, activities, accomplishments and outcomes in 2013-14, relating to the protection and status of drinking water in Saskatchewan.

Ministries and agencies engaged in drinking water management in Saskatchewan use performance information to assess overall progress towards improving the safety and management of drinking water in the province. In turn, reviews and assessments each year allow and direct the most effective adjustment of future plans and actions to address priority elements. Management affirms that all major external factors that could have an impact on performance results have been identified and explained. Additionally, significant efforts have been made to ensure performance data is valid through ongoing review and validation of data. In general, performance in addressing drinking water quality and source water protection management in Saskatchewan has paralleled or exceeded performance of other Canadian provinces where similar strategic initiatives are in place.

The results for key actions provided below are organized by common activities focusing on various components of drinking water and source water protection and a report on actual progress. The following is a summary of the most significant achievements related to drinking water and source water status and protection in Saskatchewan during 2013-14. Further information is available by contacting the Water Security Agency or viewing on the internet at www.SaskH2O.ca.

Assessment of the State of Drinking Water in Saskatchewan

The assessment of the state of drinking water in Saskatchewan is presented in a manner consistent with previous reports so that key measures provide a continuous and ongoing history.

Waterworks systems and operations provide safe, clean and sustainable drinking water

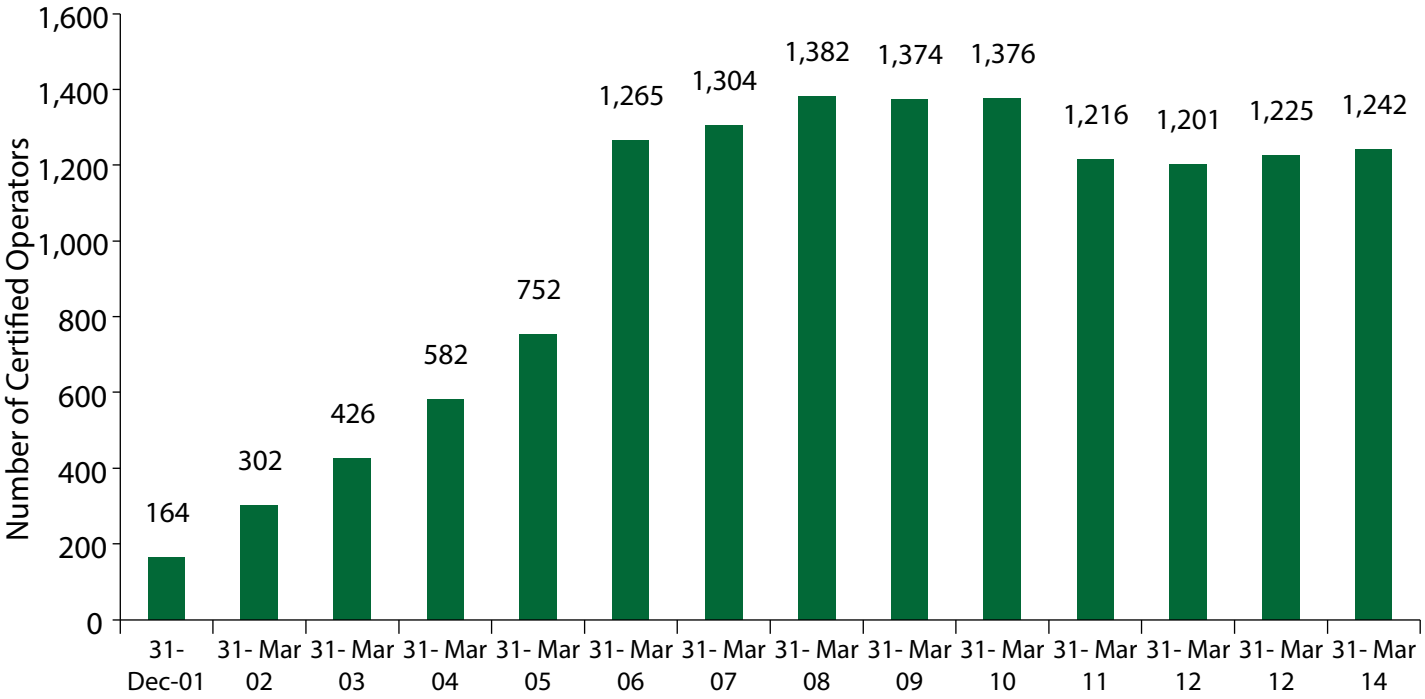
Waterworks staff are capable and well-trained

Provision of safe drinking water is highly reliant on the knowledge and capabilities of waterworks operators and the manner in which they apply their skills to produce and monitor the quality of drinking water. Along with source water protection, sound and capable infrastructure, water quality monitoring, and knowledgeable operators, are some of the elements of a "multi-barrier approach" to ensure safe drinking water. The following reports on statistics and a key measure related to ensuring waterworks operational staff are capable and well trained as of March 31, 2014.

State of Drinking Water Quality – Waterworks Staff are Capable and Well-Trained

Figure 1 provides a historical summary of the number of operators certified to date. As of March 31, 2014, the number of all active certified operators reported by the OCB is 1,242. These are all the certified operators in Saskatchewan, including those who operate waterworks that are not regulated by the Water Security Agency. Indian and Northern Affairs Canada (INAC) requires First Nation operators to become certified by the same criteria of education, experience and examination as operators mandated by the Water Security Agency. There were 113 First Nation Operators certified at the end of this fiscal year. In addition, there are 12 operators working in federal facilities such as parks or correctional centers. In addition to the 1,242 active/current operators, 189 are overdue for their certification renewal and are not on the list.

Figure 1: Certified Operator Statistics, December 2001 to March 31, 2014



Source: Operator Certification Board certification records database

As of March 31, 2014, a total of 2,058 waterworks or sewage works operators had been certified by the Saskatchewan Operator Certification Board since that organization began to formally certify operators in 2002. Of the 2,058 total certified operators to date, 1242 operators retained full active certification as of March 31, 2014.

During 2013-14, approximately 75 per cent of operators receiving renewal notification from the OCB actually renewed their certification. This is a decrease from 2012-13, when 88 per cent of operators renewed their certification on notification by the OCB. There is still an issue with late applications for renewal by operators and a higher rate of retirements by operators. The OCB is following up with operators and waterworks owners to resolve outstanding operator certification requirements.

The OCB continued to certify water and wastewater works operators throughout 2013-14. As of March 31, 2014, there were approximately 664 waterworks licensed by the Water Security Agency with at least one certified operator, regional operator or contract operator (see Table 1). Some operators continue to take exams and are in the process of obtaining certification, or upgrading their certification levels and categories. Some smaller municipal waterworks do not require a certified operator rather a trained operator is required by regulation. Some facilities sought hygienic classification, which does not require a certified operator. The Water Security Agency continues to work with municipalities, waterworks owners and others to maintain and to advance the implementation of operator certification and continuing education in the province. As of March 31, 2014 only one community, Antler, did not employ a certified operator or regional operator to oversee the operation of their waterworks. Thirty five out of 592 permitted waste water facilities did not employ a certified operator. All 35 non-certified operators were operating lagoon systems.

Table 1 provides additional trend information on the number of waterworks with certified operators since 2000-01, for all waterworks regulated by the Water Security Agency.

Table 1: Summary of certification trends for waterworks since 2000-01

	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14
Certified operators[1]	44	293	403	533	682	1107	1170	1223	1231	1229	1216	1201	1225	1242
All waterworks with certified operators[2]	24	116	217	219	326	532	614	638	675	659	660	603	778	782
Number of licensed waterworks[3]	609	609	617	630	641	714	728	724	765	772	778	789	796	800
Number of Hygienic Works not Requiring Certified operators	N/A	N/A	N/R	N/R	N/R	92	101	107	114	113	118	117	120	135

[1] Operators working in all waterworks including Water Security Agency regulated facilities
[2] Includes all waterworks with certified operators in the province
[3] Licensed works includes municipal water treatment works, municipal water distribution systems, pipelines and large privately or government owned waterworks regulated by the Water Security Agency. These values include hygienic waterworks that do not require a certified operator
N/A: Not Applicable.
N/R: Not Recorded.
Source: Operator Certification Board database and Water Security Agency, Environmental Management System.

Table 2 provides information on the number of operators certified at various levels in all categories of the water and wastewater treatment industry in Saskatchewan during 2013-14.

Table 2: Distribution of certified operators at water and wastewater works - fiscal year 2013-14*

System Classification[1]	Water Treatment	Water Distribution	Wastewater Treatment	Wastewater Collection
Small System[2]	146	155	107	111
Class-1	431	514	524	477
Class-2	343	363	124	168
Class-3	78	34	26	18
Class-4	48	15	24	12
Total	1046	1081	805	786

[1] Waterworks system classification is defined by the complexity and size of the waterworks in accordance with standard parameters adopted from the Associated Boards of Certification (ABC). More information on waterworks system classification is available from the Operator Certification Standards EPB139 (see http://www.saskh2o.ca/DWBinder/EPB139OperatorCertificationStandards2002.pdf.)
[2] There are several types of Small Systems. A Small Water System is defined as a Class-1 groundwater treatment and/or Class-1 distribution system, serving fewer than 500 people. Small treated drinking water pipelines serving fewer than 500 people can be classified as Small Systems and some of their operators have become certified as Small System operators and are shown only under Water Distribution. A Small Wastewater System is a Class-1 wastewater treatment system (generally a lagoon system) and/or a Class-1 collection system serving fewer than 500 people.
**Note: Table 2 does not include operators that are overdue in certificate renewal as of March 31, 2014.*
Source: Operator Certification Board Database

The number of certified operators applying for initial certification during the 2013-14 fiscal year was 137, and there were 119 operators who applied to upgrade their certification by either increasing their level of certification or adding new categories of certification. A summary of communities with Certified Operators and Operator Classification, updated after each OCB meeting, is available on the internet (http://www.SaskH2O.ca/foroperators.asp).

Measurement Results

Per cent of communities with human consumptive waterworks whose operators have received some level of certification

Table 3: Per cent of communities with human consumptive waterworks whose operators have received some level of certification

	Sept 30, 2004	Mar 31, 2006	Mar 31, 2007	Mar 31, 2008	Mar 31, 2009	Mar 31, 2010	Mar 31, 2011	Mar 31, 2012	Mar 31, 2013	Mar 31, 2014	Annual Change (2013-14)
Per cent of communities with human consumptive waterworks whose operators have received some level of certification	54.3	96.8	98.9	99.2	99.2	98.9	98.3	99.6	99.4	99.8	↑0.4

Source: Water Security Agency – Environmental Management System

As of March 31, 2014, 99.8 per cent of communities with human consumptive waterworks have operators that have achieved some level of certification (Table 3). This represents 0.4 per cent increase in compliance from the previous year when 99.4 per cent of community waterworks had an operator certified to some level. Over 99 per cent of the population served by a community (municipal) human consumptive waterworks have an operator that has received full certification or some level of training (completed any approved training courses). Knowledgeable, certified operators help to ensure safe drinking water.

Compliance with operator certification is primarily controlled by the owner of the waterworks, but also requires cooperation from the waterworks operator(s). Acceptance and uptake of operator certification is a key to ensuring the delivery of safe drinking water. As a point of comparison, Alberta's (population 4.1 million) mandatory certification program took effect on January 1, 1983 and its program currently has approximately 2461 certified operators. Currently, there is no cost for their certification examinations, applications and renewals. Saskatchewan (population approximately 1.1 million) has 1,242 certified operators. Examinations cost about $80, and certification and renewal fees (every two years) are $150. Compared with Alberta, Saskatchewan's certification program has progressed significantly since its inception in 2000.

Infrastructure produces water that meets the national guidelines

Infrastructure design, capability, condition and maintenance are critical in the production of safe drinking water. Standards, incentives, requirements, compliance measures and implementation plans are also important to ensure that waterworks are operated and monitored to achieve drinking water of a quality that protects human health. The "Guidelines for Canadian Drinking Water Quality" (see: www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2012-sum_guide-res_recom/index-eng.php), are used in Canada as the definitive measure of science-based safety criteria for drinking water. Saskatchewan has adopted the guidelines as standards (see: www.SaskH2O.ca/DWBinder/EPB207Drinking_Water_Standards_post.pdf). The following reports on key measures and statistics related to ensuring that infrastructure produces water that meets national drinking water quality guidelines.

State of Drinking Water Quality – Infrastructure Produces Water That Meets the National Guidelines

In terms of the status of drinking water in Saskatchewan, the bacteriological quality of water is a critical parameter because, when the related standards are exceeded, there is a possibility of rapid significant health effects for consumers. Saskatchewan uses coliform bacteria as an indicator of the quality of drinking water. The Saskatchewan Disease Control Laboratory and the Saskatchewan Research Council employed routine analysis for *E. coli* during the fiscal year to help improve the meaning and speed of monitoring results. Saskatchewan's standards for bacteriological drinking water quality are more stringent than the "Guidelines for Canadian Drinking Water Quality."

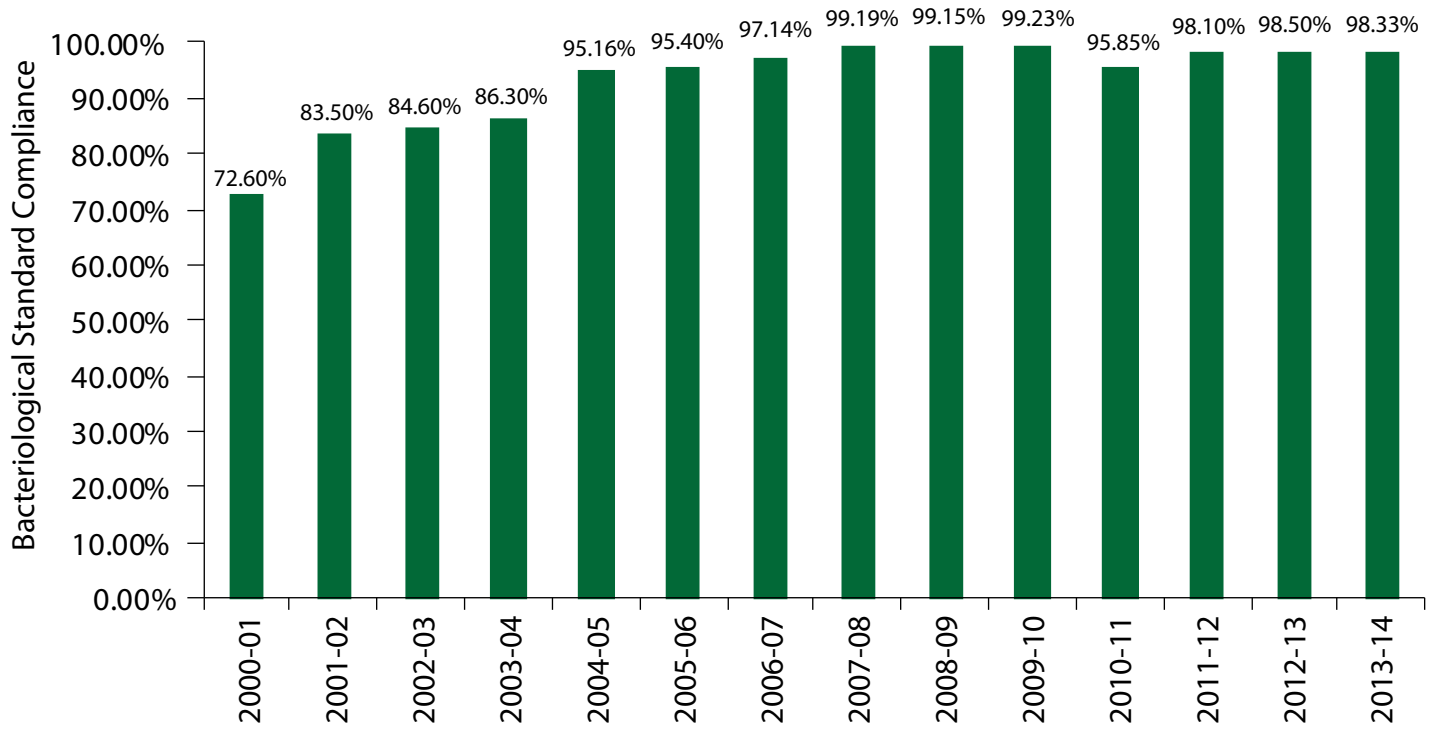
The number of samples required for bacteriological water quality monitoring of a waterworks is based on the number of people served by the system (see "Municipal Drinking Water Quality Monitoring Guidelines" at www.SaskH2O.ca/foroperators.asp), or go directly to www.SaskH2O.ca/DWBinder/EPB202MunicipalDrinkingWaterQualityGuidelinesEdition3.pdf. When a routine water sample shows the presence of bacteria, follow-up activities including repeat sampling are performed. The Water Security Agency issued two Precautionary Drinking Water Advisories (PDWAs) and four Emergency Boil Water Orders (EBWOs) during 2013-14, when bacteriological related problems arose at waterworks.

During 2013-14, there were 21,419 valid Municipal Human Consumptive Use routine bacteriological water quality samples submitted of which 115 samples (0.537 per cent) exceeded the water quality standards of zero total coliforms, zero fecal coliforms or greater than 200 background bacteria per 100 millilitres of water. During 2013-14, more routine bacteriological water quality samples were submitted from municipal waterworks regulated by the Water Security Agency than were required by permit requirements. A total of 21,419 routine bacteriological samples were submitted, 1,921 more than the required number, equating to a sample submission rate of 109.85 per cent. During 2012-13, there were 20,665 valid routine bacteriological water quality samples submitted of which 101 samples (0.489 per cent) exceeded the water quality standards. For the same period, a total of 20,665 out of 19,056 (108.44 per cent) of the required regular samples for bacteriological water quality were submitted from municipal waterworks regulated by the Water Security Agency. The increase in total "required" samples in 2013-14 is largely related to ground water works being declared Ground Water Under Direct Influence (GUDI) or waterworks subject to ammonia/free chlorine issues and resultant higher monitoring requirements.

Measurement Results

Per cent of facilities that meet bacteriological guidelines 90 per cent of the time

Figure 2: Bacteriological standards compliance



Source: Water Security Agency - Environmental Management System

In 2013-14, there was a 0.17 per cent decrease in compliance with bacteriological standards for municipal human consumptive waterworks (90 per cent of the time), when compared with the previous fiscal year. The reason for this decrease is due to some non-compliance with increased monitoring requirements for some communities that have recently been declared GUDI. Water Security Agency staff will continue to work to ensure municipalities and the operators of the community water supplies recognize the importance of meeting bacteriological water quality standards as a means to protect consumer health in the future.

In terms of longer trends, there has been a net increase in compliance with bacteriological water quality standards (90 per cent of the time), over the past 13 fiscal years with a 25.73 per cent increase in compliance, from 72.6 per cent in 2000-01 to 98.33 per cent in 2013-14 (Figure 2). The longer term increase in compliance with standards is the result of increased inspection and follow-up on water quality sampling results by the Water Security Agency, as well as increased attention to water treatment and monitoring by waterworks owners and operators. In 2013-14, the Water Security Agency issued four Emergency Boil Water Orders and one Precautionary Drinking Water Advisory resulting from detection of bacteriological contamination in routine water quality samples submitted by the waterworks.

The bacteriological quality of drinking water is important since contamination of this type can result in significant illness within a short period of time. Compliance with bacteriological water quality standards was selected as a reportable performance measure, since it provides a good indication of drinking water quality, which is important to consumers. Tracking compliance with bacteriological standards over several years indicates a positive trend. Compliance with this measure is primarily controlled by the owner of the waterworks, but also requires cooperation from the waterworks operator(s) in achieving bacteriological water quality compliance. Ongoing inspection and interaction with waterworks owners and operators is conducted to sustain good performance in achieving water that is safe from bacteriological threats.

There were 90 Municipal Human Consumptive Use waterworks in the province that exceeded the bacteriological standards at least one time during 2013-14. During the same period, there were eight waterworks that had more than 10 per cent of their routine bacteriological water samples show the presence of bacteria (Martinson's Beach, Love, Rama, Gronlid, Briercrest, Aquadeo, Sintaluta and Sleepy Hollow Beach). Lumsden Beach had exactly 10 per cent of their routine bacteriological water quality samples exceed the bacteriological standards. This is an increase from 2013-14, when there were 70 Municipal Human Consumptive Use waterworks in the province that exceeded the bacteriological standards at least one time.

Turbidity describes water cloudiness and is an indirect measure of the number of suspended particles in water. Turbidity is a good indicator of the effectiveness of a water treatment system and is important because turbid water can harbor disease-causing organisms. If excessive turbidity is present, the effectiveness of disinfection of drinking water can be impaired. Waterworks regulated by the Water Security Agency are required to measure turbidity at least on a daily basis as a means to track water treatment system performance.

The Water Security Agency's turbidity standards are consistent with the "Guidelines for Canadian Drinking Water Quality, Seventh Edition." During phase-in of the turbidity standards, the Water Security Agency generally applied a turbidity standard of 1.0 Nephelometric Turbidity Units (NTU) for existing waterworks. The provincial turbidity standards presently in effect are: 0.1 NTU for membrane filtration systems; 0.3 NTU for conventional filtration systems, and 1.0 NTU for slow sand filtration and groundwater based systems. During the 2013-14 fiscal year, on-site monitoring for turbidity and record keeping continued to be a requirement and these records were checked during site inspections by Environmental Project Officers. Any turbidity related upsets were addressed through provision of advice on system repairs, reservoir cleaning, distribution system flushing and verification through water quality monitoring.

Water Security Agency staff continued to ensure that waterworks owners and operators track turbidity-monitoring results and manage turbidity related water quality problems. There were 14 PDWAs issued during 2013-14 when turbidity related problems arose at waterworks. Turbidity testing results continue to be reported in conjunction with information submitted with regular bacteriological samples.

The range of turbidity results tested by all agencies in 2013-14, (municipal, private, and government owners) is shown in Table 4.

Table 4: Range of turbidity testing results – 2013-14

Turbidity Range (NTU)	Samples	Per Cent Samples	Systems*
0 – 1	28,817	94.23%	646
1 – 2	951	3.11%	218
2 – 3	328	1.07%	86
3 – 4	213	0.70%	52
4 – 5	147	0.48%	36
5+	127	0.41%	50
Totals	30,583	100 %	N/A*

** The total number of systems is not applicable as some systems reported turbidity testing results in more than one range of turbidity values. There are a total of 796 waterworks systems regulated by the Water Security Agency.*
Source: Water Security Agency - Environmental Management System

Disinfection is widely used in Saskatchewan and Canada as one of the key methods to prevent the spread of waterborne disease. Most disinfection of drinking water in the province is performed using chlorine-based products. Unless otherwise permitted, waterworks regulated by the Water Security Agency are required to maintain:

a) a free chlorine residual of not less than 0.1 milligrams per Litre (mg/L) in the water entering a distribution system;

b) a total chlorine residual of not less than 0.5 mg/L or a free chlorine residual of not less than 0.1 mg/L in the water throughout the distribution system; and

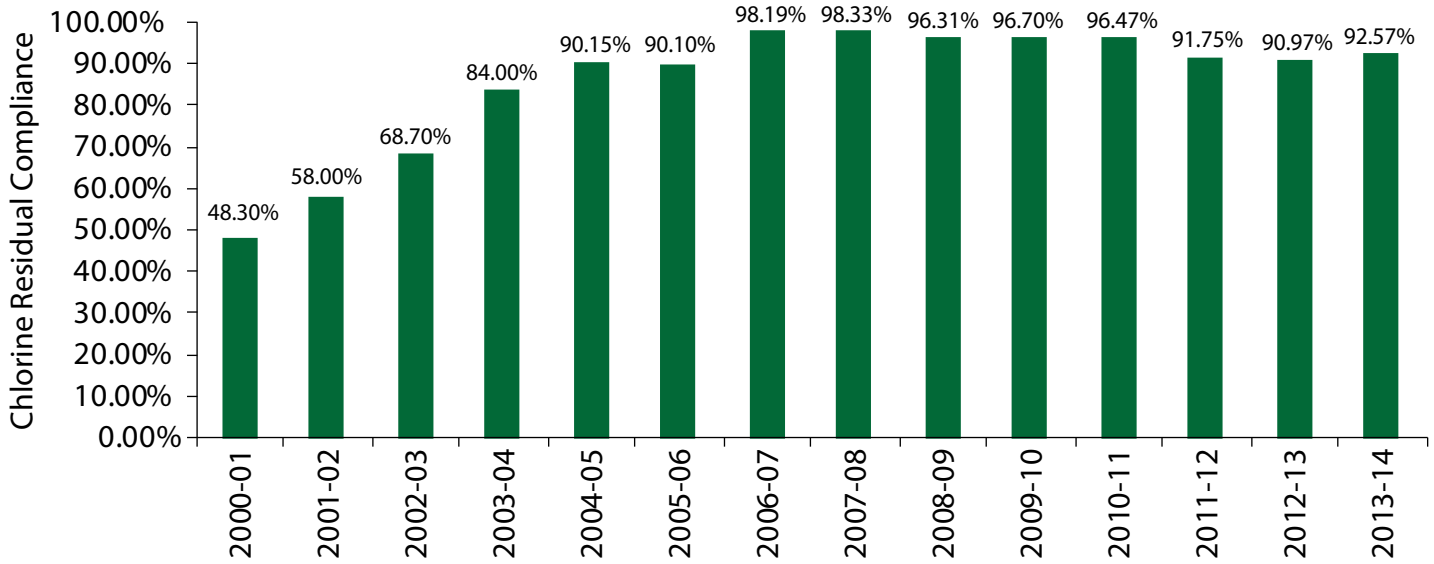
c) chlorine residuals are expected to be within regulatory limits 90 per cent of the time.

Chlorine disinfectant monitoring usually includes two tests: total chlorine residual and free chlorine residual, which are done from samples collected from the water distribution system. Free chlorine residual in drinking water is important in providing lasting protection in water distribution systems. Total chlorine residual is helpful for waterworks operators to understand the effectiveness of disinfection and to judge cleanliness of the water distribution system. On-site monitoring for chlorine residual and associated record keeping is required and these records are checked during site inspections by Water Security Agency's Environmental Project Officers. During 2013-14, the Water Security Agency issued 12 Precautionary Drinking Water Advisories as a result of chlorination related concerns or problems at waterworks.

Measurement Results

Per cent of waterworks [regulated by the Water Security Agency] that meet disinfection requirements 90 per cent of the time

Figure 3: Disinfection standard compliance



Source: Water Security Agency – Environmental Management System

There has been a slight increase in compliance with the disinfection standards over the past fiscal year to 92.57 per cent in 2013-14 compared to 90.97 per cent in 2012-13 (Figure 3). The increase from the 2012-13 results is attributed to an improvement in smaller communities achieving and maintaining consistent disinfectant levels. The compliance rate remains significantly above the 2000-01 compliance rates of 48.30 per cent of facilities meeting disinfection requirements. Communities that failed to consistently achieve disinfection compliance included Aquadeo, Belle Plaine, Buffalo Narrows, Drake, Eldora Beach, Evesham, Francis, Frobisher, Glen Ewen, Glenavon, Griffin, Herbert, Holdfast, Kannata Valley, Kelliher, Keystown, Kincaid, Kindersley, Kuroki, Lintlaw, Love, Major, Manor, Marengo, Marsden, McLean, Medstead, Mohr's Beach, Mortlach, Paddockwood, Pelican Narrows, Pelly, Pennant, Plenty, Prelate, Qu'Appelle, Riceton, Rocanville, Sintaluta, Stony Beach, Stony Rapids, Viscount, Waldheim, and Wollaston Lake. In instances where low disinfectant levels were detected and reported, Water Security Agency staff followed up with the waterworks owners/operators to resolve the problems.

Proper disinfection of drinking water is one of the most important ways to ensure safe drinking water and prevent the outbreak of waterborne diseases. Compliance with chlorine residual requirements was selected as a measure since it provides a good indication of drinking water protection, which is important to consumers. Compliance with this measure is primarily controlled by the owner of the waterworks, but also requires cooperation from the waterworks operator(s) in achieving disinfection standards compliance. The ongoing inspection and interaction with waterworks owners and operators is necessary to ensure that water is safe from bacteriological threats and meets disinfection standards.

The Water Security Agency uses the "Guidelines for Canadian Drinking Water Quality" as the basis for the water quality standards found in *The Water Regulations, 2002*. These standards are included in each new or renewed waterworks permit. Permitting for municipal waterworks continued through the 2013-14 fiscal year. A total of 209 waterworks operational permits were issued or renewed. The drinking water quality standards for "chemical-health" were mandatory as of December 2010, for existing waterworks and take effect upon the start-up of any new waterworks. Another 73 wastewater works operational permits were also issued, renewed or amended during the reporting period.

During 2013-14, through the Federal-Provincial-Territorial Committee on Drinking Water, drinking quality standards were completed for vinyl chloride, turbidity, protozoa, E. coli, coliforms, and heterotrophic plate count (micro-organisms). Work commenced and/or continued for numerous parameters including selenium, nitrate/nitrite, ammonia, benzo(a)pyrene, pH, toluene/ethylbenzene/xylene, PFOS/PFOA, copper, tetrachloroethylene, 2,4-D, atrazine, lead, bromate, manganese, microcystin toxins and uranium.

Drinking water health and toxicity parameters include a range of naturally occurring substances (arsenic, barium, boron, lead, nitrate, selenium, uranium, etc.), and other substances such as trihalomethanes, which may be produced during chlorine based disinfection processes. These substances represent a small potential for adverse health effects over longer time periods. While the safety gains associated with eliminating microbial threats far outweighs any possible adverse health risks associated with disinfection by-products, it is important to monitor to ensure they remain within safe levels. A complete list of the health and toxicity substances monitored at Water Security Agency regulated waterworks is available at www.SaskH2O.ca/foroperators.asp (see "Municipal Drinking Water Quality Monitoring Guidelines", or go directly to www.SaskH2O.ca/DWBinder/EPB202MunicipalDrinkingWaterQualityGuidelinesEdition3.pdf).

Water quality standards are achieved through permitting, inspection and follow-up on monitoring results. For existing waterworks, a regulatory phase-in period required that all works meet health and toxicity standards by December, 2008, (population of 5,000 or more) or by December, 2010, (population of less than 5,000). Table 5 depicts compliance with sample submission requirements and testing compliance for health and toxicity parameters during the 2011-12 to 2013-14 fiscal years based on routine samples submitted by Water Security Agency permitted waterworks.

Table 5: Health and toxicity sample submission and parameter result compliance 2013-14 to 2011-12 fiscal years*

Fiscal Year	Health and Toxicity Sample Submission Compliance Rate (Percentage)	Parameter Standards Compliance Rate (Percentage)
2013-14	79.35	92.14
2012-13	71.65**	90.93**
2011-12	70.90**	91.14**

**Health and Toxicity parameters include: Aluminum, Arsenic, Barium, Boron, Cadmium, Chromium, Copper, Lead, Selenium, Uranium and Zinc*
***Values are restated for 2011-12 and 2012-13 fiscal years due to previously undetected calculation errors.*
Source: Water Security Agency – Environmental Management System

Municipal waterworks sample submission rates increased by 7.7 per cent in 2013-14 to 79.35 in comparison to the 2012-13 fiscal year for heath and toxicity parameters. Parameter standards compliance also increased by 1.21 per cent in 2013-14 from 90.93 per cent in 2012-13. Increased compliance is related to completion of water treatment plant upgrading in some smaller municipal systems to remove trace constituents such as arsenic, uranium and selenium. The current drinking water quality standards for health and toxicity parameters took full effect in December, 2010. The Water Security Agency has and will continue to follow up on a quarterly basis with waterworks owners who have not submitted the required samples as a means to help ensure compliance with monitoring and drinking water quality standards.

In 2013-14, there were 24 of 473 municipal human consumptive waterworks that exceeded at least one health and toxicity related chemical standard resulting in a total of 32 exceedences from the regular required health and toxicity related testing. Periodically municipalities will submit additional voluntary samples beyond the monitoring requirements established in their permits to operate as a means to better define water quality conditions. In total there were another 36 of 473 municipal human consumptive waterworks that exceeded at least one health and toxicity related chemical standard resulting in a total of 195 exceedences from additional voluntary health and toxicity related testing carried out during the reporting period. When exceedences for health and toxicity parameters, such as arsenic or uranium, were encountered and would represent a short-term health risk, waterworks owners are advised of the results and Precautionary Drinking Water Advisories in the form of do-not-drink or do-not-use advisories for the affected water supplies. Of all the testing for arsenic resulting from regular required sampling, there were 15 instances of arsenic exceedences that occurred in samples from 10 human consumptive systems. Additional voluntary arsenic testing was conducted by another 13 human consumptive municipal systems resulting in 59 additional exceedences. The nine uranium exceedences occurred in eight human consumptive municipal systems from regular required sampling. Additional voluntary uranium testing was conducted by another five human consumptive municipal systems resulting in an additional 19 exceedanaces. Table 6 provides a list of the parameters and number of excursions at all Water Security Agency regulated municipal waterworks.

Table 6: Health and toxicity parameter specific excursion totals for Water Security Agency regulated waterworks during 2013-14, 2012-13, 2011-12 and 2010-11.

Parameter	Number of Excursions in 2010-11*	Number of Excursions in 2011-12*	Number of Excursions in 2012-13*	Number of Excursions in 2013-14
Arsenic	11 (24**)	17 (25**)	23 (30**)	15 (59**)
Barium	0	0	0	0
Copper	0	0	0	0
Nitrate	0	0	0	0
Lead	2 (266**)	2 (290**)	3 (94**)	3 (98**)
Selenium	2	1 (4**)	3 (4**)	5
Uranium	19 (22**)	1 (23**)	5 (34**)	9 (19**)

**Values noted for 2010-11, 2011-12 and 2012-13 have been restated in Table 6. Values for all years shown in Table 6 are now based on permit based requirements for routine health and toxicity sample submissions which includes but is not limited to the parameters noted for municipal human consumptive waterworks. Previous statistics provided for this table included all exceedences, including numerous repeat samples submitted for a waterworks attempting to better define exceedence values that were at levels near compliance, thereby giving a false picture in comparison with other works which only sampled in accordance with permit requirements.*
*** Values in parenthesis represent exceedences from additional voluntary sampling performed by municipalities beyond permit based monitoring requirements.*
Source: Water Security Agency – Environmental Management System

During 2013-14, six of 473 human consumptive municipal waterworks exceeded the maximum acceptable concentration for fluoride on 15 sampling occasions based on routine health and toxicity sample submissions. Two of these facilities, Frontier and La Loche, have high, naturally occurring fluoride in their ground water supplies, which accounted for 11 of the 14 exceedences. Assiniboia and SWC Codette Lake Regional Water Supply each had one exceedence based on routine health and toxicity sample submissions and Naicam had two exceedences. The Resort Village of Tobin Lake is also known to have elevated naturally occurring fluoride in its drinking water supply and a "Do Not Drink" Precautionary Drinking Water Advisory is in place for that community due to elevated fluoride concentrations. The Resort Village of Tobin did not submit routine samples for fluoride analysis in 2013-14, however, the Water Security Agency monitors results from all human consumptive systems that artificially fluoridate or have high naturally occurring fluoride.

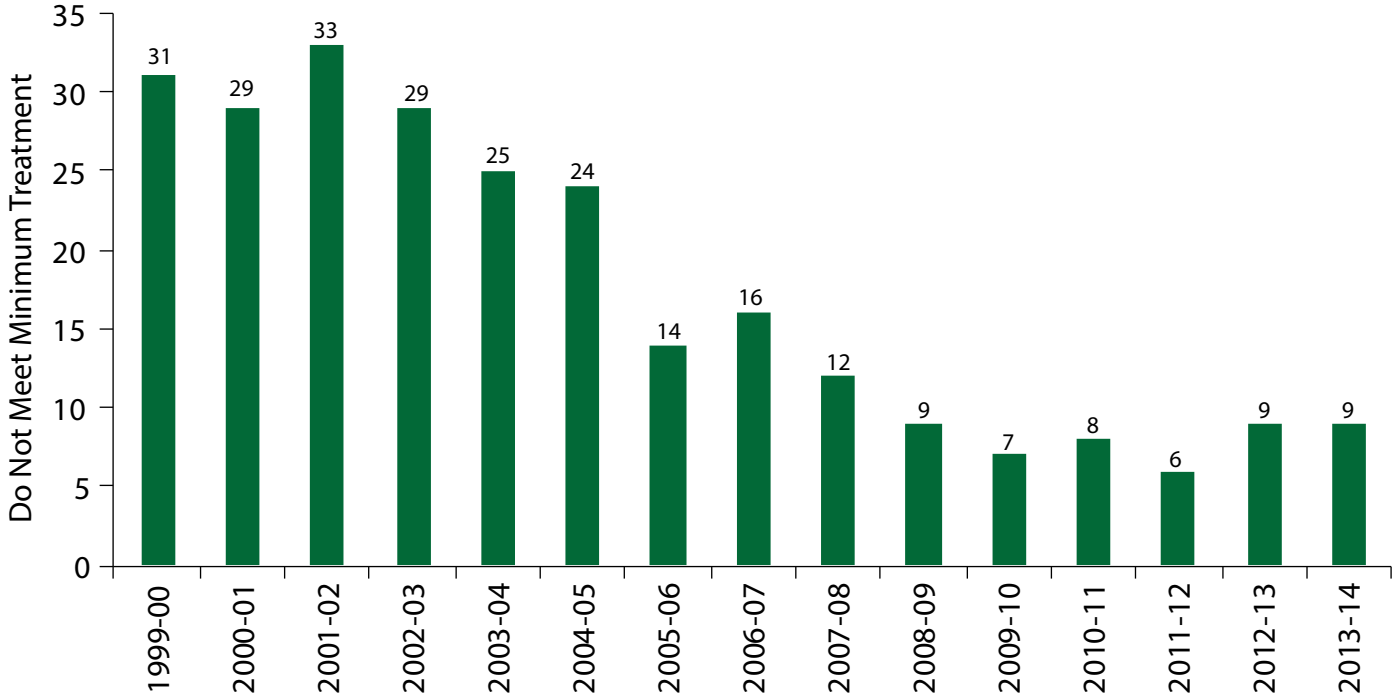
Implementation of the trihalomethane drinking water quality standard continues with the intent to assure full compliance with the requirements that took effect as of December, 2010. The standard for trihalomethane is 100 parts per billion based on an average of four seasonal samples.

A total of 218 surface water treatment and delivery facilities were required to participate in the trihalomethane monitoring program during the 2013-14 fiscal year, which should result in 889 samples being submitted each year. The actual number of regulated waterworks that submitted samples was 196 (89.91 per cent). A total of 853 samples (95.95 per cent overall submission compliance) were submitted by the facilities. During 2013-14, 176 regulated waterworks (80.73 per cent) submitted 658 samples for analysis that met the maximum acceptable concentration for trihalomethanes in drinking water. During 2013-14, 153 of 218 regulated waterworks (70.18 per cent) produced water that met the trihalomethane objective of 100 ug/L based on the annual average of seasonal sampling. During 2012-13, 140 of 210 regulated waterworks (66.67 per cent) produced water that met the trihalomethane objective of 100 ug/L based on the annual average of seasonal sampling. During 2011-12, 135 of 190 regulated waterworks (71.05 per cent) produced water that met the trihalomethane objective of 100 ug/L based on the annual average of seasonal sampling.

Measurement Results

Number of waterworks that do not meet Water Security Agency's minimum treatment requirements

Figure 4: Number of waterworks regulated by Water Security Agency that do not meet minimum treatment requirements*



**Minimum treatment requirements include: an approved form of filtration and disinfection for waterworks reliant upon surface water or shallow groundwater sources; and disinfection alone for waterworks reliant on deep, well protected groundwater sources. The measure counts non-compliance with minimum treatment requirements for permitted waterworks.*
Source: Water Security Agency Advisory Tracking Spreadsheet

As of March 31, 2014, there were nine permitted waterworks that did not meet Water Security Agency's minimum treatment requirements. This is the same number of waterworks that did not meet minimum treatment requirements as the previous year; however, listing for two works were removed (Coderre and Creelman) and listings for two works were added (Ranch Erhlo and Markinch) (Figure 4). Educational efforts and discussion on upgrading options and requirements continue; however, upgrading to meet minimum treatment requirements can be a costly venture and all infrastructure grant programs that may aid in upgrading waterworks are currently fully allocated. The Water Security Agency's educational and compliance activities will continue during 2014-15, in efforts to reduce the number of waterworks not meeting minimum treatment requirements; however, harsher compliance measures may be required to resolve treatment deficiencies. The owner of the waterworks primarily controls the achievement of this measure; however, the regulator has significant influence through a number of mechanisms such as permit requirements for upgrading, issuance of notices of violation and related compliance actions. Periodically, as newly regulated waterworks are permitted such as the case with Ranch Erhlo, inadequacies in water treatment capability are discovered.

The number of waterworks that do not meet minimum treatment requirements is a direct indication of potential water quality concerns because of infrastructure inadequacies. As of March 31, 2014, human consumptive waterworks with a permanent population that did not meet minimum treatment requirements served approximately 728 residents or 0.07 per cent of the provincial population (January 1, 2014 estimated provincial population of 1,117,502). Three of the waterworks that do not meet minimum treatment requirements are systems regulated since the passage of *The Water Regulations, 2002*. The remaining six systems, which do not meet minimum requirements, were regulated prior to the regulatory changes of 2002. The Water Security Agency continues to place all regulated waterworks not meeting minimum treatment on Precautionary Drinking Water Advisories to protect consumers. The Water Security Agency also provides technical advice to communities not meeting minimum treatment requirements to assist waterworks owners to work towards system improvements. Cost of improvements is the main impediment to progress.

The condition, capability and capacity of water treatment and distribution infrastructure is critical in providing drinking water that meets provincial standards and national guidelines. Infrastructure funding and grants are important to help upgrade and expand infrastructure to meet guidelines, standards and the pressure created by growth. Due to savings, four additional water and sewer projects were approved under the Canada-Saskatchewan Building Canada Fund - Communities Component (BCF-CC) in 2013-14. In 2013-14, $3.151 million in interest-free subsidies were provided for 43 water and wastewater projects under SIGI. Under the federal-provincial infrastructure programs (BCF-CC, PT Base, and BCF-CC MIC), $10.2 million was provided for 26 water and wastewater projects in 2013-14.

In 2013, the Northern Municipal Trust Account (NMTA) spent $8.19 million under the Northern Water and Sewer program for 18 water and wastewater infrastructure projects in 14 northern communities, ensuring safe drinking water and enabling the communities to accommodate growth and development. The projects included upgrades to the wastewater treatment system in Buffalo Narrows, the completion of a sewage lagoon expansion in Ile a la Crosse, the completion of a wastewater treatment system in Denare Beach, sewage pump station upgrades in Sandy Bay, and ongoing work on a shared wastewater treatment system between the Northern Hamlet of Patuanak and the English River First Nation.

Included in the $8.19 million are project costs from the Emergency Water and Sewer Program. Emergency projects were approved for a water main repair in Air Ronge, a well repair in Beauval, and a water main replacement and frozen line repair in Wollaston Lake. In addition to those projects, work continued on prior year projects in Denare Beach and St. George's Hill. Total costs equalled $23,521.

For all water and wastewater infrastructure projects, the NMTA has a contractual arrangement with Saskatchewan Water Corporation for provision of project management services. Services consist of general engineering, infrastructure assessment and planning, managing, design, budget control and payment administration, and the construction and commissioning of works. Contract expenditures in 2013 were $462,518. This total is also integrated into the $8.19 million of Northern Water and Sewer program costs.

Waterworks systems and operations are financially sustainable

Ensuring the financial sustainability of waterworks is critical in the production of safe drinking water over the long term. Waterworks deteriorate over time and may need to be expanded or replaced. Therefore, municipalities will need to know the condition of their waterworks and put in place pricing and capital investment policies for these systems. Public transparency will aid in ensuring that waterworks systems are sustainable into the future. The following reports on a key measure related to ensuring financially sustainable waterworks systems and operations.

State of Drinking Water Quality – Waterworks Systems and Operations are Financially Sustainable

Waterworks rates that cover waterworks expenditures and debt payments are a direct indicator of waterworks financial sustainability. The public reporting regulations facilitate consumers' understanding of the need for, and possibly acceptance of, waterworks rates that cover costs.

Measurement Results

Percentage of municipalities that have reported waterworks information on the financial sustainability of their systems and percentage of municipal waterworks that have reported that they have rates that cover waterworks expenditures and debt payments.

Of the municipalities that submitted their public waterworks information to the Ministry of Government Relations, 48 per cent (44 per cent in 2012-13) reported waterworks revenues that covered the waterworks expenditures and debt payments.

Municipalities must submit their long-term financial sustainability plan for their waterworks as part of their application for most infrastructure programs provided through the Ministry of Government Relations.

Lack of municipal capacity will limit some smaller municipalities from establishing these waterworks policies and strategies.

The drinking water regulatory system is clear and effective

Regulations are clear and ensure that health and drinking water quality will be protected

Providing safe drinking water requires clear regulations communicated to and understood by the waterworks owners and operators. Additionally, accepted standards and practices are required to ensure requirements are met. Program delivery and related policies are necessary to track and ensure regulatory requirements are being met. Collectively, these measures will help ensure that drinking water is safe and wastewater effluent discharges do not threaten the quality of source waters or adversely impact the environment. The following reports on key measures and statistics related to ensuring that health and drinking water quality will be protected.

State of Drinking Water Quality - Regulations are Clear and Ensure that Health and Drinking Water Quality will be Protected

Waterworks inspections are carried out by the Environmental Project Officers who are the most important point of contact and compliance mechanism to ensure proper management of drinking water. During a three-year cycle, at least one inspection will be unannounced. Water sources, such as wells or surface water intakes, are re-inspected every second year. The results of all waterworks Water Security Agency inspections can be found online at: www.SaskH2O.ca/MyDrinkingWater.asp, and the results of wastewater system inspections can be found online at: www.saskh2o.ca/wastewaterinfo.asp. Having inspection results online is intended to increase transparency and public trust in drinking water supplies and the associated processes. During 2013-14, a total of 896 waterworks inspections were conducted during the reporting period in accordance with the Water Security Agency's inspection protocol and targets. During the fiscal year, Health Region public health inspectors inspected 1,298 public water supplies that fall under The Health Hazard Regulations. Table 7 summarizes the findings of key elements for inspections conducted during 2013-14 by the Water Security Agency.

Table 7: Waterworks inspection finding summary (2013-14)

Inspection Element	Non-Compliant	N/A or No Response*	Compliant
Disinfection continuous at plant	24	12	860
Disinfection Free chlorine > or = 0.1 mg/L leaving the plant	114	166	616
Monitoring daily chlorine	71	19	806
Reservoirs in good repair	25	111	760
Water treatment plant in clean and orderly condition	29	42	825
A total chlorine residual not <0.5 mg/l or a free chlorine residual not <0.1 mg/l in the distribution system	111	33	752
Bacteriological testing after completion, alteration, extension or repair	7	72	817
Reporting of chlorine upsets	59	71	766
Record keeping	6	3	887

N/A = Non-applicable. Some waterworks inspected do not have a treatment plant such as pipeline systems. These may be recorded as N/A or No response.
Source: Water Security Agency– Environmental Management System

The Bacteriological Follow-up Protocol for Waterworks Regulated by the Water Security Agency and the Ministry of Environment EPB 205 provides for the issuance of PDWAs by the Water Security Agency when there is a concern that problems (due to microbial or chemical contamination) may exist. Water Security Agency staff members also use a protocol for upset reporting and follow-up to protect consumer health and drinking water quality. Waterworks owners and operators continue to be advised of upset reporting requirements during inspections. Emergency Boil Water Orders (EBWO) are issued by Health Region officials to deal with confirmed public health threats such as microbial contamination of drinking water. Tables 8 and 9 outline statistics for PDWAs and EBWOs issued for Water Security Agency and Health Region regulated waterworks during the 2013-14 fiscal year.

Table 8: EBWO/PDWA Statistics for 2013-14 – Water Security Agency Regulated Waterworks

Time	EBWO	PDWA
In effect prior to reporting period	1	55
Added during the reporting period	4	401
In effect at end of reporting period	2	63

Source: Water Security Agency

Table 9: EBWO/PDWA Statistics for 2013-14 – Health Region Regulated Waterworks

Time	EBWO	PDWA
In effect prior to reporting period	65	98
Added during the reporting period	13	46
In effect at end of reporting period	55	105

Source: Information provided by the Health Regions in Saskatchewan

Tables 10 and 11 provide information regarding the reasons for PDWAs and EBWOs issued during the 2013-14 fiscal year for waterworks regulated by the Water Security Agency and Regional Health Authorities. Further information on the nature of a PDWA and EBWO issued by the Water Security Agency is available from the Agency or at www.SaskH2O.ca/advisories.asp.

During 2013-14, a total of 314 unexpected water quality reasons affecting waterworks regulated by the Water Security Agency were reported and addressed such as system depressurizations, water main breaks, or other failures or upsets, which resulted in Precautionary Drinking Water Advisories (PDWA). Unexpected upsets or events accounted for 78.3 per cent of all PDWA's issued in 2013-14 for water quality reasons, which was 18 per cent more than in 2012-13 when 60.3 per cent of the PDWA's issued were because of unexpected events. Line breaks or pressure loss was the most frequent water quality related reason (292 instances or 72.8 per cent) for issuance of a PDWA in 2013-14. From the operational reason category, planned system maintenance (102 instances or 25.4 per cent) or treatment /distribution equipment failure or damage (72 instances or 18 per cent) were the most frequent reasons for issuance of a PDWA of these reported events. A total of 137 (34.2 per cent) of all PDWA's during 2013-14, were issued due to anticipated operational reason events such as planned maintenance activities or startup of seasonal or new waterworks.

Table 10: Reason for issuing PDWAs and EBWOs during 2013-14 – Water Security Agency

*Unexpected events

Summary of Reasons for Precautionary Drinking Water Advisories (PDWA) Issued by the Water Security Agency Between April 1, 2013 and March 31, 2014		
PDWAs by Reasons		
Water Quality Reasons	Number	Percentage
Line break or pressure loss in distribution system*	292	72.8
No applicable water quality reason	83	20.7
Suspected contamination*	1	0.25
Unacceptable turbidity or particle counts in treated water*	14	3.5
Significant deterioration of source water quality due to environmental conditions*	1	0.25
Exceedences of Maximum Acceptable Concentration or drinking water standard*	5	1.25
E. coli detected in drinking water system*	1	0.25
Cross connection with backflow suspected or confirmed	1	0.25
Insufficient quantity	3	0.75
Total	401	100.0

Operational Reasons	Number	Percentage
Planned system maintenance	102	25.4
Power outage resulting in system pressure loss or reduced storage of treated water	61	15.2
Treatment or distribution equipment failure or damage	72	18.0
Start-up of waterworks	35	8.7
No applicable operational reason	51	12.7
Treatment unable to cope with significant deterioration of source water quality	4	1.0
Inadequate disinfection residual in distribution system	7	1.75
Contamination during construction, repair or operation	33	8.3
Does not meet minimum treatment / design requirements	5	1.25
Does not meet monitoring requirements	7	1.75
Does not meet reporting requirements	1	0.25
Damaged well components	10	2.5
Damaged cistern or holding tank	3	0.75
No or inadequate disinfection at treatment plant	5	1.25
Treatment/distribution system failure	3	0.75
Undetermined source of contamination	2	0.5
Total	401	100.05**

EBWO's by Reasons	Number	Percentage
Water Quality Reasons		
E. coli detected in drinking water system	4	100.0
Total	4	
Operational Reasons		
No applicable operational reason	2	50.0
Undetermined source of contamination	2	50.0
Total	4	100.0

*** Exceeds 100 per cent due to decimal place rounding.*
Source: Canadian Network for Public Health Intelligence based on WSA PDWA and EBWO Tracking Records

Table 11: Reason for issuing EBWOs and PDWAs during 2013-14 – Health Region regulated waterworks

Summary of reasons for Precautionary Drinking Water Advisories (PDWA) and Emergency Boil Water Orders (EBWO) Issued by Saskatchewan Regional Health Authorities between April 1, 2013 and March 31, 2014 Note: More than one reason can be identified per PDWA or EBWO		
Number of PDWAs by reasons		
Water Quality Reasons	**Number**	**Percentage**
Total coliforms detected in drinking water system	39	69.6
Suspected contamination	2	3.6
No applicable water quality reason	11	19.6
Line break or pressure loss in distribution system	3	5.5
Significant deterioration of source water quality suspected or confirmed due to environmental conditions	1	1.7
Total	56	100

Operational Reasons		
Undetermined source of contamination	11	18.6
No applicable operational reason	20	33.8
Inadequate disinfection residual in distribution system	6	10.2
Does not meet minimum treatment / design requirements	5	8.5
Does not meet monitoring requirements	8	13.6
Start-up of water works	2	3.4
Damaged well components	1	1.7
Damaged or inadequately maintained cistern or holding tank	1	1.7
Treatment/distribution equipment failure or damage	1	1.7
No or inadequate disinfection at the treatment plant	1	1.7
Non-commissioned plant	1	1.7
Contamination during construction, repair or operation	2	3.4
Total	59	100

Number of EBWOs by reasons		
Water Quality Reasons		
E. coli detected in drinking water system	24	96
Suspected Contamination	1	4
Total	25	100

Operational Reasons		
Inadequate disinfection residual in distribution system	11	44
No applicable operational reason	5	20
Undetermined source of contamination	6	24
Does not meet minimum treatment / design requirements	1	4
Damaged well components	1	4
Contamination during construction, repair, or operation	1	4
Total	25	100

Source: Information provided by the Health Regions in Saskatchewan

During 2013-14, the Ministry of Health/Health Regions drafted new fact sheets to address precautionary measures that should be taken at households and public facilities during times of an EBWOs/PDWAs. These fact sheets are expected to be implemented in early 2014-15.

During 2013-14 the Ministry of Health contracted work with Habitat Health Impact Consulting Ltd. of Alberta to develop tools for usage by the Ministry of Health and the Health Regions when reviewing project proposals that are submitted to the Ministry of Environment Environmental Assessment Branch. These tools will assist the Ministry of Health/Health Regions in conducting in-depth environmental health impact assessments of project proposals, which includes assessment of potential impacts on semi-public water supplies. Also, $30K from the Water Management Funding – Regional Support Services was used to offset a portion of the contract cost.

The Water Security Agency's Drinking Water and Wastewater Compliance and Enforcement Protocol EPB 434 continues to provide direction and guidance for Environmental Project Officers to ensure that uniform and efficient compliance and enforcement practices are followed in dealing with non-compliance for drinking water and wastewater related violations. Protecting public health, safety of people and the environment is the overall purpose. The enforcement protocol requires that compliance be obtained initially through the use of public education and prevention as initial priorities while enforcement is a tool of last resort. Compliance related actions might also be applied when an issue is causing, or has the potential to cause, a significant risk to public health and safety, or the environment.

The implementation of the enforcement and compliance protocol continued in 2013-14 and was integral in gaining compliance in problematic or difficult situations. Forty-six written warnings were issued for waterworks and sewage works related infractions. As well, one sewage works protection order was issued to a non-compliant party. Two charges were laid for drinking water and wastewater related infractions. There were two convictions registered. One conviction related to a charge which was laid in the previous reporting period. One charge is still before the courts as of March 31, 2014. The nature of water and wastewater related infractions encountered during the reporting period are summarized in Table 12.

Compliance Mechanisms

Compliance mechanisms consist of verbal warnings, written warnings, protection orders, and prosecution actions. Verbal warnings are issued for minor offences encountered during inspection duties. Verbal warnings are documented on inspection forms used by inspection staff to ensure proper follow-up. Written warnings consist of letters of non-compliance and notices of violation. They are issued for non-compliance detected during inspections, or when follow-up requirements identified through previous inspections or correspondence was not complied with. Waterworks and Sewage Works Protection Orders are issued to a person responsible for a system to protect human health or the environment. Table 12 provides a breakdown of infraction details during 2013-14.

Table 12: Enforcement and Compliance Activities-Drinking Water/Wastewater 2013-14

Infraction	Written Warnings Issued	Ministerial Orders issued	Charges Laid	Convictions	Alternative Measures
Fail to report upset condition at waterworks	6				
Fail to report upset condition at sewage works	2				
Fail to operate waterworks in accordance with permit to operate	1		1		
Fail to construct waterworks in accordance with permit to construct	2				
Construction on waterworks without permit	10			1	
Construction on sewage works without permit	5				
Fail to sample daily for chlorine (waterworks)	4				
Fail to submit required bacteriological samples (waterworks)	6		1	1	
Fail to ensure chlorine levels meet requirements (waterworks)	1				
Improper record keeping (waterworks)	2				
No certified operator at waterworks	2				
No certified operator at sewage works	1				
Fail to meet sewage works design requirements	3	1			
Unlawfully discharge sewage without approval	1				
Total	46	1	2	2	0

As of March 31, 2014, approximately 52 community waterworks had yet to achieve compliance with chemical, disinfection by-product or trace metal standards. Of the 52 affected communities in the province, 46 have evaluation or upgrades

underway and/or have received infrastructure upgrade funding to aid with improvements. One community may be suitable for or has applied for hygienic classification and four may be resolved through operational optimization.

The Water Security Agency issued 209 new or renewed waterworks operational permits during 2013-14, as a means to ensure waterworks technology and requirements to keep pace with new developments and to help protect consumer health and drinking water quality. A total of 26 pre-existing waterworks permits were amended. Another 73 wastewater works operational permits were issued, renewed or amended during the fiscal year. A total of 272 permits to construct or upgrade waterworks (147) and sewage works (125) were issued or amended over the 2013-14 reporting period. Compared with last year, this is a 15 per cent decrease in the number of construction permits issued. Permit application materials are available online at www.SaskH2O.ca/foroperators.asp under the heading "Forms". The total estimated value of the construction work for all water and wastewater projects approved by the Water Security Agency is estimated at $200 million ($80M for water and $120M for sewer), based on data from 53 per cent of projects reporting cost estimates. Compared to last year, this is a seven per cent decrease in the total estimated value of constructed works. Notable large projects permitted this year (>$2M) include the Meadow Lake 9th Avenue sewage pumping station, the Martensville sewage pumping station number 4, the Saskatoon Aspen Ridge sewage lift station and force main, and the Arcola sewage lagoon expansion.

For the period of this report, a total of 35,365 drinking water samples were processed at the Saskatchewan Disease Control Laboratory. A breakdown indicated that 74.6 per cent of the samples for water supplies were from Water Security Agency regulated waterworks. 13.8 per cent were from private customers, and 11.6 per cent were from the Ministry of Health/Health Regions.

Laboratory accreditation was selected as a measure to help gauge results in ensuring safe drinking water for Saskatchewan residents. Laboratory accreditation shows that the facility has a recognized quality assurance and quality control system that assures representative analytical results.

Measurement Results

Number of accredited drinking water testing laboratories

Table 13: Number of accredited drinking water testing laboratories

Mar 2002	Mar 2003	Mar 2004	Mar 2005	Mar 2006	Mar 2007	Mar 2008	Mar 2009	Mar 2010	Mar 2011	Mar 2012	Mar 2013	Mar 2014	Annual Change
1	2	4	6*	6*	6*	6*	6*	6*	7*	7*	6*	8	↑2

** All labs performing or have performed analysis for waterworks regulated by the Water Security Agency*
Source: Canadian Association for Laboratory Accreditation web http://www.cala.ca/.

As of March 31, 2014, eight laboratories in Saskatchewan that perform analysis of drinking water samples retained accreditation to the Standards Council of Canada and standards by the Canadian Association for Laboratory Accreditation (Table 13). Accredited laboratories include: Ministry of Health – Saskatchewan Disease Control Laboratory, Saskatchewan Research Council, ALS Laboratory Group, Cameco Corporation, the City of Saskatoon Laboratory, AGAT Laboratories, Environment Canada – National Laboratory for Environmental Testing, and the Buffalo Pound Filtration Plant Laboratory. Two of these laboratories, including Cameco Corporation, Environment Canada – National Laboratory for Environmental Testing, provide analytical services for internal clients only.

Professional regulatory staff has access to the tools necessary to ensure compliance

Providing safe drinking water requires accessible training and tools for staff. The tools take the form of working agreements, computerized information systems, rugged notebooks for data collection in the field, as well as examples, guidelines and educational information needed to deliver programming. Staff qualifications must also be assured and kept current with new or evolving water management and information gathering processes. Collectively, these tools help staff to ensure that drinking water is safe and that wastewater effluent discharges do not threaten the quality of source waters or adversely impact the environment. The following reports on a key measure and statistics related to ensuring that professional regulatory staff have access to the tools necessary to ensure compliance during 2013-14 and prior.

State of Drinking Water Quality – Professional Regulatory Staff has Access to the Tools Necessary to Ensure Compliance

The number and average duration of visits to the SaskH2O.ca website is a good measure of the use of tools that help ensure the protection of drinking water. During 2013-14, there was a significant increase in the number of visits to the website (Figure 5). However, there was a slight decrease in the duration of visits compared to the previous fiscal year (Figure 6).

Measurement Results

Number and average duration of visits to the www.SaskH2O.ca website

Figure 5: Number of visits to the www.SaskH2O.ca website

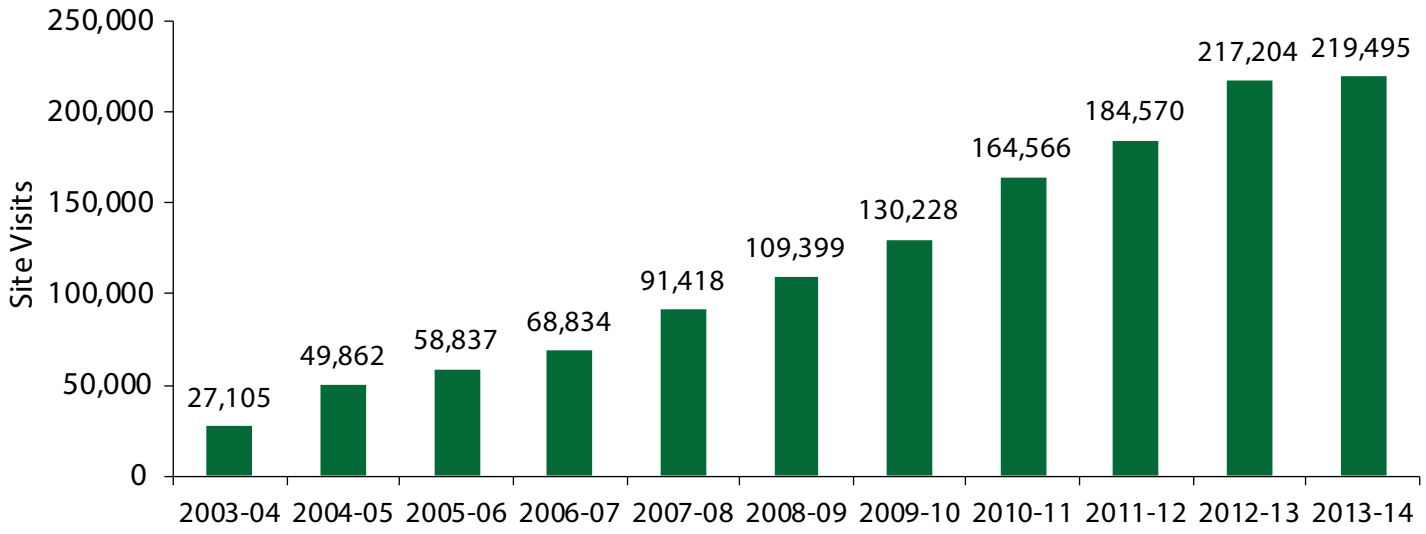
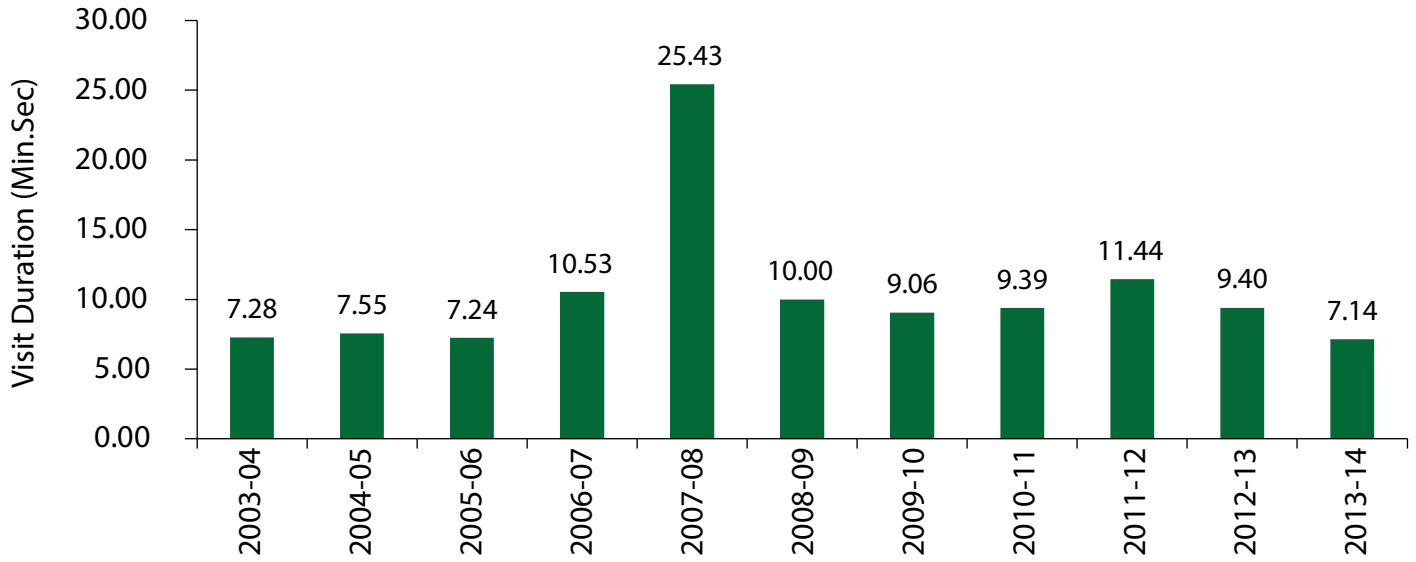


Figure 6: Average duration of visits to the www.SaskH2O.ca website



**SaskH2O.ca website launched on June 21, 2003. 2003-04 is a partial year.*

Source: Webtrends information system

During 2013-14, over 46,171 samples and 260,376 measurements were updated in the Water Security Agency's Environmental Management System (EMS). These samples/measurements include, but are not limited to, surface water, distributed water, effluent and precipitation.

High quality source waters are protected now and into the future

Risks to source water quality are known

Protecting source water quality is a vital part of providing safe drinking water. Identifying risks to source water quality is the first step in developing actions and strategies to protecting it; thereby minimizing the cost of treating drinking water. Through the watershed planning actions, it is expected that other risks to source water quality will be identified. The following reports on a key measure and statistics related to ensuring that risks to surface water quality are known.

Inspection of wastewater systems is an important means to protect source water and drinking water. During the 2013-14, 570 inspections at wastewater works were completed by Water Security Agency staff. The results of all wastewater system inspections can be found online at www.saskh2o.ca/wastewaterinfo.asp . Information gained from comprehensive inspection results is useful in protecting source water and aquatic habitat. It will also be used to move towards compliance with the pending "Canada-Wide Strategy for Municipal Waste Water Effluents," thereby advancing wastewater management in the province. A total of 73 additional wastewater works operational permits were issued, renewed or amended in 2013-14. Table 14 summarizes the findings of key elements for facultative lagoon wastewater system inspections conducted during 2013-14 by the Water Security Agency. Table 15 summarizes the findings of mechanical wastewater system inspections carried out by the Water Security Agency during the 2013-14 fiscal year.

Table 14: Facultative lagoon wastewater works inspection finding summary (2013-14)

Inspection Element	Non-Compliant	N/A* or No Response	Compliant
Two basins in series	30	26	498
Immediate reporting of upset/bypass condition	6	158*	390
Maintenance work & failure of treatment components	46	40	468
Dates of discharge of sewage and volumes of discharge	26	208*	320
Locations from which samples are taken	12	193*	349
Results of any tests	7	184*	363
Approved system	7	5 **	542
Certified operator	67	57	430
Maintained in appropriate manner	91	33	430
Sampling done as required	30	175*	349

** N/A = Non-applicable. Some facultative lagoon wastewater works inspected do not discharge effluent and some works serve less than 50 people and therefore the compliance measures for those systems do not apply. These may be recorded as N/A or No Response in the inspection forms.*
*** These systems are mechanical plants which also have storage and treatment lagoons. Compliance with the "Approved System" criteria is included in the inspection summary for mechanical wastewater works as part of the overall treatment system (Table 15 below).*
Source: Water Security Agency – Environmental Management System

Table 15: Mechanical wastewater works inspection finding summary (2013-14)

Inspection Element	Non-Compliant	N/A* or No Response	Compliant
No interconnection between sanitary sewer and storm sewer	4	0	12
Pumping stations must have mechanically forced air ventilation	2	0	14
Effluent quality demonstrated to meet permit requirements for BOD5	2	1	13
Effluent quality demonstrated to meet permit requirements for TSS	8	1	7
Immediate reporting of upset/bypass condition	2	0	14
Disinfection performed as per permit	2	5	9
Immediate reporting of failure of disinfection equipment	0	5	11
Locations from which samples are taken	0	0	16
Results of any tests	2	0	14
Approved system	1	0	15
Certified operator	1	0	15
Reporting of exceedance	3	0	13
On-site testing completed as required	4	0	12
Sampling done as required	4	0	12

** N/A = Non-applicable.*
Results of one mechanical wastewater works inspection (aerated lagoon) is not included in Table 15 as it was recorded as a facultative lagoon inspection and included in Table 14.
Source: Water Security Agency – Environmental Management System

Proper application on pesticides is an important means to protect drinking water and source water supplies. Under *The Pest Control Products (Saskatchewan) Act*, there were 1,845 pesticide applicator licenses issued, 630 service (businesses) licenses and 408 pesticide vendor licenses. Each vendor maintains an approved storage facility registered and approved by the industry and the Ministry of Environment. An applicant for a pesticide applicator license must pass a recognized pesticide applicator course. The applicator training is valid for a five-year period; however, the applicator license is renewed on an annual basis. Licensing of these operations is an important means in protecting water quality.

Similarly permitting the application of pesticides for use in or near water is an important means to protect source waters. Thirty-two permits were issued during 2013-14 for chemical control of Aquatic Nuisances in and/or near surface water in accordance with Section 35 of *The Environmental Management and Protection Act, 2002*. These permits aid in protecting surface water from contamination with pesticides. In 2013-14, the Environmental and Municipal Management Services Division issued a support letter to the Pest Management Regulatory Agency of Health Canada to include the request of Saskatchewan Ministry of Agriculture, for Emergency Use Registration for Malathion, Entrust, Ripcord, Delegate and Pyganic for the management of Spotted Wing Drosophila (SWD) in berries and stone fruits in Saskatchewan.

State of Drinking Water Quality - Risks to Source Water Quality are Known

The number of sewage effluent discharges that represent a risk to source waters is a direct indication of the potential for source water contamination due to poor wastewater treatment. This measure incorporates the need for future compliance with MWWE standards and pending WSER requirements. This measure was selected since it is the most direct measure of the number of potential significant contamination point sources. Work to resolve problematic wastewater systems will continue in the foreseeable future.

Measurement Results

Number of sewage effluent discharges that represent a risk to source waters

Table 16: Number of sewage effluent discharges that represent a risk to source waters

March 2004	March 2005	March 2006	March 2007	March 2008	March 2009	March 2010	March 2011	March 2012	March 2013	March 2014	Annual Change
93	93	85	116	114	114	112	105	128	120	111	9

Source: Water Security Agency – File Information and Environmental Management System

As of March 31, 2014, approximately 111 wastewater systems have been identified as having a discharge that may reach a surface water body or groundwater and represent a risk to source waters under certain conditions (Table 16). Growth in Saskatchewan communities continues to place additional pressure on sewage infrastructure as some communities were at treatment and/or storage capacity. On an annual basis, Water Security Agency staff review the quality of effluent from each regulated sewage works. Reduction of ammonia emissions within treated wastewater effluent, sewage works capacity or other treatment capability issues typically involve significant planning, investment and construction. Therefore, it can be expected that reductions in the number of works, which represent a risk to source waters, will be a time consuming process.

The Water Security Agency has evaluated wastewater systems in the province. As of March 31, 2014, approximately 88 systems may require compliance with pending Canada-wide Standards for Municipal Waste Water Effluent (MWWE) and 71 may need to comply with the Wastewater System Effluent Regulations (WSER) passed into law in July 2012 pursuant to the federal *Fisheries Act*. The final number of wastewater systems, which must be managed to the WSER standard, will be finalized once an administrative agreement is developed between the Water Security Agency and Environment Canada.

Watersheds are protected, natural purification and protection processes are maximized, and potential for contamination is minimized

Protection of source waters can reduce the cost of water treatment and improve water quality while helping to sustain the resource for other uses. Sound water resource management means the processes responsible for breaking down wastes must be protected, as must the land use practices responsible for protecting water from contamination. Actions in terms of both organizational structure and watershed/water management are improving source water protection in the province. The following reports on a number of key measures related to ensuring that watersheds are protected, natural purification and protection processes are maximized and potential for contamination is minimized.

State of Drinking Water Quality - Watersheds are Protected; Natural Purification and Protection Processes are Maximized, and Potential for Contamination is Minimized

Established water quality guidelines and effluent quality standards and implementation of such standards are an important means to manage and protect watershed and source water quality. The Water Security Agency represents the province on national committees that establish guidelines, objective and standards for water quality, one example being the Canadian Council of Ministers of the Environment, Water Quality Task Group (WQTG) for the development of science-based water quality, sediment, and tissue residue guidelines (Canadian Environmental Quality Guideline-CEQG) for the protection of aquatic life and other beneficial water uses in the province.

Monitoring of effluent quality is also necessary to understand the potential impacts on receiving streams and advance protection of watersheds and source water quality. The Environmental and Municipal Management Services Division conducted research, modeling and mass balance studies for small category wastewater treatment plants in the province that are affected by the MWWE strategy using all previously collected toxicity data, receiving stream water quality data including data from fish-bearing waters. Based on these studies, site-specific Effluent Discharge Objectives (EDOs) for selective wastewater parameters for the small category wastewater treatment plants were determined. The Water Security Agency intends to conduct additional monitoring of receiving streams and fish-bearing waters receiving effluent from small wastewater treatment plants to address statistical needs and confirm the site-specific EDOs developed for small category wastewater treatment plants. In future years further monitoring and research studies are planned as a means to support the development of site-specific EDOs for very small category wastewater treatment plants in the province that are affected by the MWWE strategy.

Evaluation and alternative wastewater management techniques are also an important means to protect watersheds and source water. SaskWater is now three years into its five-year woodlot effluent irrigation research project. In 2011, the Corporation completed construction of a scalable irrigation system to be used as an example for full-sized community projects. The project uses wastewater effluent to irrigate tree plots and is expected to significantly lower capital and operating costs, resulting in zero discharge into surface water bodies. Several tree varieties are being examined to determine the most suitable type. This project is a partnership between SaskWater, the City of Moose Jaw, Communities of Tomorrow (former), Prairie Adaptation Research Collaborative (PARC), the Ministry of Agriculture, the University of Regina, and the Agroforestry Development Centre (ADC).

The Statements of Provincial Interest Regulations (SPI) was adopted on March 29, 2012. The SPI contains an interest specifically for source water protection of resources used for human hygienic use and further addresses the importance of water under interests relating to public works, sand and gravel, biodiversity and natural ecosystems, shorelands and water bodies and public safety.

The SPI require the water interests of the province be reflected in local and regional planning documents such as official community plans and zoning bylaws. The SPI are implemented through the local development permit approval process and the subdivision review process. The Ministry of Government Relations, Community Planning Branch, has developed training material to assist municipal administrators, municipal councillors and professional planners when preparing official community plans. As well, the Community Planning Branch reviews municipal planning bylaws and subdivision applications for compliance with the SPI.

Intensive livestock operation design review and the inspection of these works aid in protecting watersheds and source water. The Ministry of Agriculture requires intensive livestock operations to develop waste storage and management plans that will not contaminate water resources and, in 2013-14, there were 16 plan approvals issued for intensive operations. Some approvals were for expansions and/or modifications to existing operations. Approximately 156 site inspections were completed. Monitoring continues for surface water quality in watercourses adjacent to intensive livestock operations. The 2003 Surface Water Quality Monitoring Report is available online at
http://www.agriculture.gov.sk.ca/Default.aspx?DN=ab517097-0749-4293-b98e-dbe1935deefa.

Planning, research and development associated with agricultural operations is another important means to protect watersheds and source water. The Ministry of Agriculture provides funding through the Agriculture Development Fund to support research and development, including agricultural technologies for improved management and/or reduced environmental risks of pesticides, fertilizers and livestock manure. There are four ongoing water-related projects with a total funding allocation of $413,646. Of those, one project ($4,194) is funded under Growing Forward 2 in partnership with Agriculture and Agri-Food Canada. Projects are in irrigation agronomy and technology, water conservation and water quality.

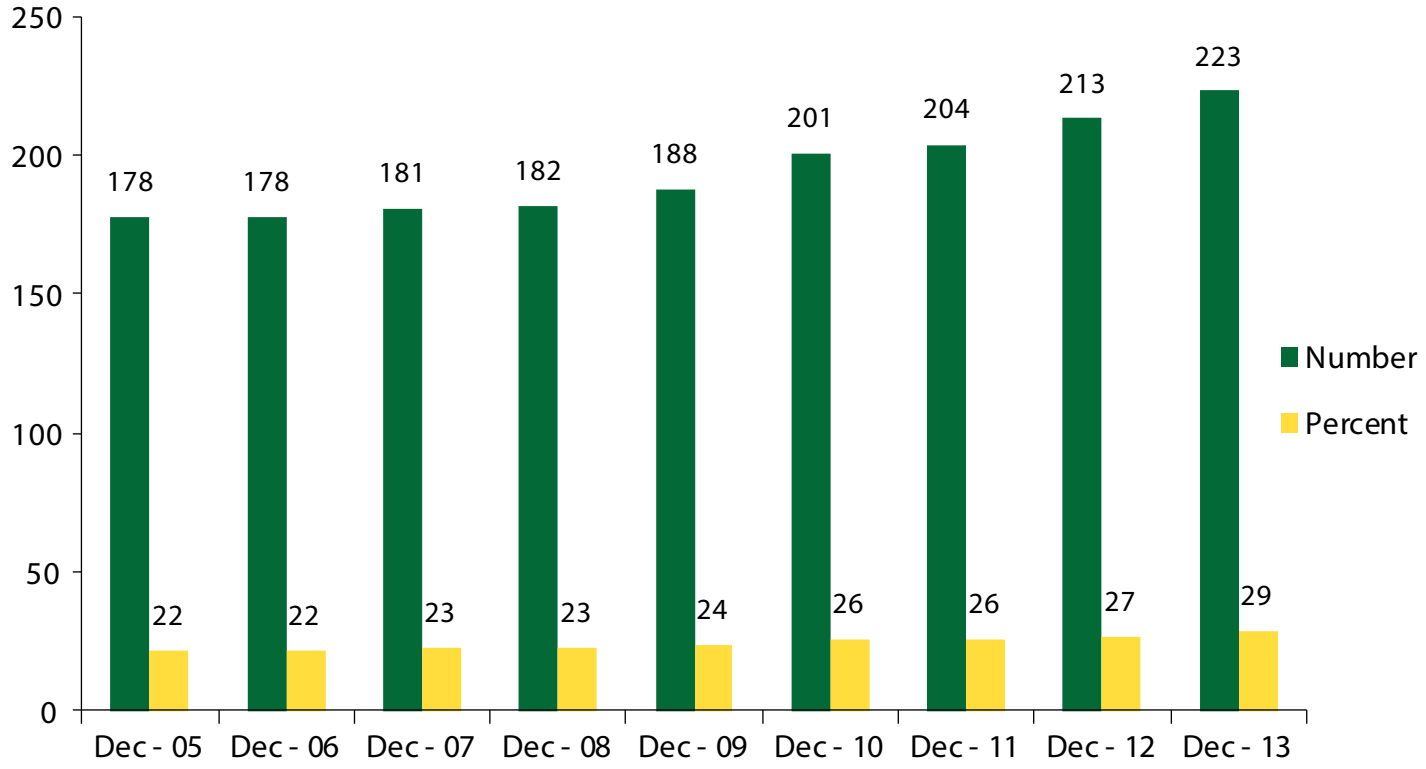
The Ministry of Agriculture is responsible for the delivery of the environment component of Growing Forward 2. It consists of Environmental Farm Planning (EFP), Agri-Environmental Group Planning and the Farm Stewardship Program. For 2013-14 EFP was delivered through a third party contract with the Provincial Council of Agriculture Development and Diversification (ADD) Boards (PCAB) (now known as Simply Agriculture Solutions Inc.). Farm Stewardship is delivered through the Ministry of Agriculture. Agri-Environmental Group Planning is delivered on a watershed basis and is led by farmers who live in the watershed. The education and planning on the control and eradication of invasive plant species is handled through the SARM administered Comprehensive Plant and Animal Pest Control Program. In 2013-14, spending on the delivery of the environment component was as follows: Group plan delivery - $863,400 and PCAB delivery – $300,000. This is the first year of the current program and up until March 31, 2014 spending on the Farm Stewardship Program was $225,100. The number of new endorsed environmental farm plans in 2013-14, was 53 with 12,011 plans produced since 2005.

The number of municipalities with bylaws in place to protect their drinking water supplies is a direct indication of the level of municipal protection of water sources.

Measurement Results

Number and percentage of municipalities with bylaws in place to protect their drinking water supplies

Figure 7: Number and percentage of municipalities with bylaws in place to protect their drinking water supplies



Source: Ministry of Government Relations

In 2013, ten municipalities adopted municipal planning bylaws containing drinking water protection provisions for the first time. The per cent of the urban and rural municipalities with some form of water management policy contained in their community planning bylaws increased to 29 per cent. Along with the ongoing work of the Municipal Capacity Development Program, municipalities are becoming increasingly aware of their responsibilities for source water protection.

The Water Quality Index (WQI) (Table 17) is a measure of the quality of ground and surface water for specific uses, such as the protection of aquatic life, livestock watering, recreation, etc., that may not otherwise be apparent through individual water quality test results. The levels of chemicals and organisms in the samples are compared with the WQI levels for the safety and health of the people.

Water Quality Index ratings for rivers

Table 17: Water quality index ratings for rivers (three-year average water quality index values and ratings for rivers)

Location	2007- 09	2007-09 Rating	2008-10	2008-10 Rating	2009-11	2009-11 Rating	2010-12	2010-12 Rating
Assiniboine River (Highway #8)	83.2	Good	83.0	Good	82.9	Good	75.2	Fair
Battle River (Battle Rapids)	81.1	Good	72.4	Fair	78.3	Fair	76.2	Fair
Beaver River (Beauval)	91.4	Good	74.6	Fair	91.3	Good	84.1	Good
Beaver River – (Dorintosh)	83.3	Good	74.2	Fair	82.0	Good	76.9	Fair
Churchill River (Otter Rapids)	83.4	Good	83.5	Good	100	Excellent	95.2	Excellent
North Saskatchewan River (Upstream Highway #16 Bridge)	91.7	Good	91.7	Good	91.4	Good	89.7	Good
North Saskatchewan River (Borden Bridge)	83.3	Good	91.7	Good	91.2	Good	84.6	Good
North Saskatchewan River (Prince Albert)	66.6	Fair	83.4	Good	91.7	Good	92.6	Good
North Saskatchewan River (Cecil Ferry North Bank)	75.2	Fair	83.4	Good	91.7	Good	91.5	Good
North Saskatchewan River (Cecil Ferry – South Bank)	75.2	Fair	83.4	Good	91.7	Good	92.5	Good
Qu'Appelle River (below Qu'Appelle Dam)	100.0	Excellent	100.0	Excellent	100.0	Excellent	95.2	Excellent
Qu'Appelle River (at Highway # 2)	74.8	Fair	83.2	Good	83	Good	80.3	Good
Qu'Appelle River (above Wascana Creek)	82.2	Good	74.9	Fair	74.5	Fair	72.1	Fair
Qu'Appelle River (Highway #11 at Lumsden at rock dyke)	82.9	Good	74.8	Fair	74.7	Fair	59.1	Marginal
Qu'Appelle River (Highway #56)	90.6	Good	90.8	Good	91.5	Good	72.6	Fair
South Saskatchewan River (Leader)	74.2	Fair	65.6	Fair	74.6	Fair	84.5	Good
South Saskatchewan River (near Outlook)	83.3	Good	83.2	Good	83.2	Good	95.2	Excellent
South Saskatchewan River (near Queen Elizabeth power station)	91.7	Good	91.7	Good	91.5	Good	85.3	Good
South Saskatchewan River (west Clarkboro)	91.7	Good	91.7	Good	91.7	Good	84.8	Good
South Saskatchewan River (near Muskoday)	75.0	Fair	83.4	Good	83.4	Good	89.8	Good
Saskatchewan River (Highway #6)	83.5	Good	91.7	Good	100.0	Excellent	95	Excellent
Souris River (Highway #39)	62.9	Marginal	69.3	Fair	74.3	Fair	68.1	Fair
Tobin Lake (at E.B. Campbell Dam)	82.7	Good	76.3	Fair	85.5	Good	92.3	Good

Source: Water Security Agency surface water quality monitoring results

The WQI is a composite measure of different chemicals and organisms in the water and whether the water quality is safe for particular uses. The WQI incorporates three elements:

- scope - the number of variables that do not meet the water quality objectives;
- frequency - the number of times that variables do not meet the objectives; and
- amplitude - the amount by which the objectives are not being met.

From these elements, the WQI produces a score between zero and 100. The government has limited direct control over the results of this broad measure of water quality. While the government regulates point source pollution, many human and natural factors can influence water quality.

The following descriptive categories are used to further explain the WQI results:

- Excellent: (value 95-100) - water quality is protected with a virtual absence of threat or impairment; conditions very close to desirable levels. These index values can only be obtained if all measurements are within objectives virtually all of the time.
- Good: (value 80-94) - water quality is protected with only a minor degree of threat or impairment; conditions rarely depart from desirable levels.
- Fair: (value 60-79) - water quality is usually protected, but occasionally threatened or impaired; conditions sometimes depart from desirable levels.
- Marginal: (value 45-59) - water quality is frequently threatened or impaired; conditions often depart from desirable levels.
- Poor: (value 0-44) - water quality is almost always threatened or impaired; conditions usually depart from desirable levels.

The WQI ratings provide a measure of the quality of water in Saskatchewan's rivers and allow a comparison of results over time. However, a limited number of samples are taken in any year and this, as well as changes in water levels and river flow from year to year, can produce significant annual changes in the index. To provide a more meaningful picture of longer term change that is still sensitive to underlying changes, the WQI for rivers has been presented as a three-year mean. The latest WQI values were provided for 2010-2012. Some stations showed a modest improvement in water quality based on the index calculations.

Citizens and consumers trust and value their drinking water and the operations which produce it

Consumers value quality water and are willing to pay for it

The following reports on a number of key measures related to ensuring consumers value quality water and recognize the need to pay for it.

State of Drinking Water Quality – Consumers Value Quality Water And Are Willing To Pay For It

Consumer willingness to pay for drinking water is an important measure of how safe drinking water is valued. Awareness campaigns and consumer polling are tools used to improve and understand how consumers value water.

SaskWater continued to deliver its "The Value is Clear" campaign in 2013. The campaign aims to create higher awareness of the value of water and of the value of SaskWater as a water and wastewater service provider. As part of the campaign, the Corporation placed billboards in a few different Saskatchewan communities, prepared online ads, and circulated handbills highlighting tips on saving water.

On a biennial basis, SaskWater polls customers on key customer satisfaction measures including water quality, the importance of water services, and the price of water. In 2012, SaskWater conducted its customer satisfaction survey and found that the overall satisfaction with SaskWater is strong, with 92 per cent of respondents stating they are either very satisfied or moderately satisfied with the Corporation. The overall average satisfaction rating increased from 8.42 in 2010 to 8.54 in 2012. SaskWater also ranked very high in providing safe drinking water. The next customer satisfaction survey will occur in 2014.

Measurement of Results

Per cent of survey respondents indicating that they are willing to pay more for their drinking water

Table 18: Per cent of survey respondents indicating that they are willing to pay more for their drinking water

Dec 2001	May 2003	Mar 2005	Mar 2006	May 2007	Feb 2008	May 2009	Mar 2010	May 2011	May 2012	May 2013	May 2014	Change
61	61.9	68	70.8	67.8	68.8	66.5	65.5	65.8	71.3	66.4	62.4	↑4.0

Source: Water Security Agency Polling Results – May 2013

Based on a poll conducted by the Water Security Agency in May 2014, 62.4 per cent of people polled are willing to pay more to improve their drinking water (strongly agree or agree) (Table 18). This value is 4.0 per cent less than the previous poll in May 2013, and is 1.4 per cent greater than the December 2001 poll results. This decrease is considered to be a significant change since May 2013. May 2014 polling results continue to show ongoing public recognition of the value of water and some related willingness to pay for it. The May 2014 polling results indicate that the majority of those somewhat or strongly disagreed with willingness to pay more for their drinking water believed that there was no concern with their community drinking water, the community drinking water was reported as safe, it would be a stress on their financial situation, or improvements have been or are being made to their community drinking water system. Relatively few respondents to the May 2014 poll noted they rely on bottled water, are served by a private well or have a water purification system installed in their residence.

Table 19: Summary of regional polling results on survey respondents indicating that they are willing to pay more for their drinking water

% Somewhat Agree or Strongly Agreeing	May 2013				May 2014			
	North	Regina	Saskatoon	South	North	Regina	Saskatoon	South
I am willing to pay more to improve the safety or the quality of my drinking water.	68.4%	57.7%	68.5%	68.6%	67.5%	63.5%	59.8%	60.9%

Source: Water Security Agency Polling Results – May 2014

In terms of regional differences (Table 19), all regions except Regina show a decrease in somewhat or strong agreement since 2013, in terms of willingness to pay more for improved water quality and safety.

Citizens and consumers trust the quality and reliability of their drinking water systems and are confident in the regulatory system

Consumers trust in drinking water and in the regulatory systems that govern water-related activities is vital to ensuring the long-term sustainability of waterworks. Consumers who trust the quality and reliability of their water supplies are more willing to support the production of safe drinking water in the future. Release of polling results also bolsters transparency and public trust. The following reports on a number of key measures related to citizen and consumer trust in the quality and reliability of their drinking water systems and confidence in the regulatory system.

State of Drinking Water Quality - Citizens and consumers trust the quality and reliability of their drinking water systems and are confident in the regulatory system

Each year the Water Security Agency conducts polling to determine public opinion associated with drinking water safety. The polling results for May 2014 show the latest measurement of polling results. Since public polling was initiated in the wake of the North Battleford water crisis in 2001, it has remained as an important mechanism in determining the level of success in attaining government's safe drinking water goals.

Measurement Results

Per cent of survey respondents indicating that they are very or somewhat confident in the quality of their tap water

Table 20: Per cent of survey respondents indicating that they are very or somewhat confident in the quality of their tap water

Dec 2001	May 2003	Mar 2005	Mar 2006	May 2007	Feb 2008	May 2009	Mar 2010	May 2011	May 2012	May 2013	May 2014	Change
72	87	86	87.3	82.6	86.6	89.9	88.7	85.5	89.7	88.1	88.3	↑0.2

Source: Water Security Agency Polling Results – May 2014

Based on a poll conducted by the Water Security Agency in May 2014, 88.3 per cent of people polled strongly agreed or agreed they are confident in the safety of their own drinking water (Table 20). These polling results continue to show a high level of confidence and are essentially the same as the previous year. The results are 16.3 per cent greater than December 2001, when 72 per cent of people surveyed were very or somewhat confident in the quality of their tap water. Actions such as consumer education efforts, waterworks inspections, media coverage of water contamination events affecting larger centres, implementation of water quality standards, water workshops, and consumer notification help maintain confidence in the safety of drinking water at a relatively high level, in the mid to high 80 per cent range since 2003. Ongoing attention to these elements of drinking water protection will help to maintain the high level of public confidence in safety of drinking water in the future. The measure is important since it provides an indication of how efforts to ensure safe drinking water are progressing.

Table 21: Summary of regional polling results on survey respondents indicating that they are very or somewhat confident in the quality of their tap water

% Somewhat and Strongly Agreeing	May 2013				May 2014			
	North	Regina	Saskatoon	South	North	Regina	Saskatoon	South
Saskatchewan residents have safe drinking water.	81.9%	84.6%	89.3%	84.0%	84.8%	85.5%	91.1%	80.8%
I am confident that my drinking water is safe.	83.9%	88.5%	93.3%	87.2%	86.8%	88.7%	92.7%	86.2%

Source: Water Security Agency Polling Results – May 2014

In terms of regional differences (Table 21) in May 2014, Saskatoon and Regina residents are more likely to somewhat agree or strongly agree that Saskatchewan residents have safe drinking water than residents of southerly or northerly regions. Further, in May 2014, Saskatoon and Regina residents are also more likely to somewhat agree or strongly agree that they are confident in the safety of their drinking water, compared to residents of northerly and southerly regions. Confidence in the safety of individual resident drinking water was high across the province with polling results ranging from 80.8 per cent in southerly regions to 91.1 per cent in Saskatoon. Polling results did not provide any direct indication as to why confidence levels changed from 2013 to 2014.

Citizens have meaningful access to information about their water quality

Information on water quality is important in building public trust in water systems. It must be understandable, current and readily accessible. To build full trust, information needs to be available both from the waterworks owner and the regulator. The following reports on key measures related to ensuring citizens have meaningful access to information about the quality of their drinking water.

State of Drinking Water Quality – Citizens Have Meaningful Access to Information About Their Drinking Water Quality

The number of system owners that publicly release water quality results is a good way to determine if consumers have direct meaningful access to information about the quality of their water.

Measurement Results

Number of system owners that publicly release water quality results

Table 22: Number of system owners that publicly release water quality results

Mar 2002	Mar 2003	Mar 2004	Mar 2005	Mar 2006	Mar 2007	Mar 2008	Mar 2009	Mar 2010	Mar 2011	Mar 2012	Mar 2013	Mar 2014	Annual Change
3	118	359	508	494	511	637	653	681	698	715	568	771	↑143

Source: Water Security Agency - Environmental Management System

As of March 31, 2014, 711 of 800 Water Security Agency regulated waterworks owners publicly released water quality results to the consumers that they serve (Table 22). This value represents a significant increase of 143 since the 2011-12 fiscal year and represents 88.9 per cent of waterworks regulated by the Water Security Agency in 2012-13. Notification to consumers is required on an annual basis for waterworks regulated by the Water Security Agency. The Water Security Agency will continue to pursue further progress on attainment of public reporting requirements during 2014-5, and beyond. The number of system owners that publicly release water quality results is a good way to determine if consumers have direct meaningful access to information about the quality of their water. Additional waterworks specific information on drinking water quality is also available at: http://www.saskh2o.ca/MyDrinkingWater.asp .

Reduced consumption of water

Reduced consumption of water is important in minimizing costs and thereby, properly valuing water. Water conservation is also necessary to protect water source quality and abundance, particularly in time of increased demand. The following reports on key measures related to consumption of water.

State of Drinking Water Quality – Reduced Consumption of Water

Measuring the municipal per capita water consumption provides for total annual urban water use (in-home, business and municipal irrigation) within communities (Table 23). The annual consumption is affected by summer irrigation demands, which vary between wet and dry years causing the performance measure to vary between years. The Water Security Agency does not have direct control over this measure but, through water conservation programs, does influence the measure.

Measurement Results

Average per capita consumption [litres per capita per day]

Table 23: Average per capita consumption [litres per capita per day]

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Annual Change
346	368	348	367	331	323	338	333	328	332*	299*	280	280	279*	↑1

**The reported value of 279 litres/capita/day is based on the data available on May 5, 2014. A complete dataset for 2013 is not available at the time this report was prepared. The database source of the performance results for this measure has a time lag of about six months; January 1 to December 31, 2013 data and will be available in July 2014.*
**Average per capita consumption is restated from 335 to 332 in 2009 and from 325 to 299 in 2010 based on a revised dataset and calculation performed in May 2013.*
Note: Commencing with the 2009 year, water consumption values are reported in metric units. Water use for previous years have also been converted to metric units using a more precise conversion factor that accounts for slight differences reported for 2008-09, and previously.
Source: Saskatchewan Community Water Use records for 2012, published June, 2013.

This measure is computed by summing the Litres per Capita per Day (LCD) for each community and dividing by the number of communities. The weighted LCD is computed by summing the yearly water consumption for each community and dividing by the total population and 365 days. The Saskatchewan Community Water Use Records maintained by the Water Security Agency is the dataset used in this determination. The change in the water consumption rate is attributed to the natural annual variability found in water consumption records and climatic, technological and behavioural influences on water use.

The reported value of 279 litres/capita/day is based on the data available on May 5, 2014. A complete dataset for 2013 is not available at the time this report was prepared. The database source of the performance results for this measure has a time lag of about six months; January 1 to December 31, 2013 data and will be available in July 2014.

Over the 2005 to 2013 period, the Water Security Agency has promoted responsible water use through a variety of public education, partnerships and programs. The previous Provincial Toilet Replacement Rebate Program is one example of how water conservation has been promoted within the province.

2013-14 Financial Overview

Actual expenditures relating to drinking water management in 2013-14 were $30.32 million, which was $1.33 million lower than the budgeted expenditures of $31.65 million.

The Ministry of Health FTE utilization for the Saskatchewan Disease Control Laboratory was at the full level of 17.5 FTEs during the reporting period. In addition to the FTEs within the Ministry of Health, funding is provided to Regional Health Authorities for water related programs and surveillance. It is not possible to state the actual number of Regional Health Authority FTEs that are dedicated to water as a number of different disciplines (i.e. Medical Health Officers, Public Health Inspectors and Public Health Nurses) can become involved in water and/or water related disease surveillance, and issue-specific time is not tracked.

Under the Canada-Saskatchewan Building Canada Fund - Communities Component (BCF-CC), Provincial Territorial Base Fund (PTBase), and Saskatchewan Infrastructure Growth Initiative (SIGI), the Ministry of Government Relations provides financial support to municipalities for priority drinking water and wastewater infrastructure improvements. In 2013-14 $8.784 million in federal-provincial funding was paid under BCF-CC; $0.651 million in provincial funding was paid out under BCF-MIC; $0.769 million in federal-provincial funding was paid out under PT Base; and $3.151 million in provincial funding was paid out under SIGI for water and wastewater projects.

Expenditures

The following table outlines information on the budgeted and actual expenditures based on original 2013-14, and revised estimates relating to water management. Funding for water management activities comes from various government ministries and agencies and is contained in their respective budgets.

Ministry or Agency	Estimates Budget ($000s)	Actual Expenditure ($000s)	Variance Over (Under) ($000s)
Ministry of Environment*	-	-	-
Water Security Agency	15,480	15,480	0
Ministry of Government Relations ***			(570)
- BCF-CC	9,354	8,784	0
- BCF-MIC	651	651	(599)
- PT Base	1,368	769	(143)
- SIGI	3,294	3,151	
Ministry of Government Relations - Total	14,667	476	0
Ministry of Health			
Regional Health Services	476****	476	0
- Regional Health Authorities (Health Regions) Base Operating Funding	30	30	0
- Regional Targeted Programs and Services	0[2]	0	0
- Regional Programs Support	1,000	983	(17)[3]
Saskatchewan Disease Control Laboratory – Environmental Services			
Ministry of Health – Total	1,506	1,489	(17)
Total	31,653	30,324	(1329)

**The Ministry of Environment performs some water-related work but that it does not have a dedicated budget for this activity and does not track drinking water specific expenditures.*
*** Expenditures shown are grants from the General Revenue Fund to the Water Security Agency for water programs.*
**** The Ministry of Government Relations budget is determined by program, not by infrastructure category (e.g. water and wastewater). The budget estimate is based on a ratio of the water and wastewater expenses compared to total program expenses multiplied by the total program budget for 2013-14.*
***** This amount does not include additional funding provided to Health Regions to offset increases to salaries and benefits through collective bargaining agreements.*
Note: As SaskWater is a Crown Investments Corporation subsidiary, its financial budgeting process, including timing and approvals, is separate from that of the ministries and/or agencies. Its activities are not related to water management, but rather the provision of water services to its customers. For full financial information, see SaskWater's annual report at www.saskwater.com .

Explanations of Major Variances

[1] In 2013-14, Saskatchewan had an early onset of winter which caused construction delays in various areas of the province especially in smaller or remote communities. Contractors could not work on the projects, or were delayed at other projects due to the weather. Delays were also caused by lack of engineering capacity and lack of construction firms available to complete the work. Some of the projects came in under budget therefore resulting in savings.

[2] $30,000 was transferred from Regional Programs Support to Regional Health Authorities' base operating funding (Mamawetan Churchill River Regional Health Authority) to address costs associated with inspection of remote health regulated water supplies in the far north.

[3] $17,000 under-expenditure for the Saskatchewan Disease Control Laboratory is due to the deferment of purchase of new analytical equipment.

Revenues

There are no revenues that arise specifically in relation to delivery of drinking water activities for the ministries of Government Relations and Agriculture. Any revenues that arise from government commitments and activities relating to drinking water and source water protection within the Ministry of Health or SaskWater are reported within their respective annual reports.

For More Information

For an electronic copy of this report or more information on the status of drinking water in Saskatchewan visit:

www.SaskH20.ca/news.asp or www.SaskH2O.ca/WaterInformationFactSheet_Drinking_AnnualReports.asp

Or contact:

Drinking Water and Wastewater Management Division
Water Security Agency
111 Fairford Street East
MOOSE JAW, SK S6H 7X9
Telephone: (306) 694-3900

Feedback on the key actions and results may also be provided to the Water Security Agency through the contact information immediately above.

Next year's annual report will address status of drinking water for the 2014-15 fiscal year.

List of Acronyms for Drinking Water Quality in Saskatchewan for 2013-14 –Appendix A

ABC	Association of Boards of Certification
ADD	Provincial Council of Agriculture Development and Diversification (ADD) Boards
ATAP	Advanced Technologies Applications
BCF-CC	Canada-Saskatchewan Building Canada Fund - Communities Component
BCF-MIC	Canada-Saskatchewan Building Canada Fund – Major Infrastructure Component
BMP	Beneficial Management Practices
CAC	Certification Advisory Committee
CCME	Canadian Council of Ministers of the Environment
CES	Consulting Engineers of Saskatchewan
CESI	Canadian Environmental Sustainability Indicator
CEU	Continuing Education Units
COM	Certified Operations and Maintenance
CSIP	Canada-Saskatchewan Infrastructure Program
DWQI	Drinking Water Quality Index
EBWO	Emergency Boil Water Order
EFP	Environmental Farm Plans
EMS	Environmental Management System
EPO	Environmental Project Officer
FSIN	Federation of Saskatchewan Indian Nations
FTE	Full Time Equivalent
GUDI	Groundwater Under Direct Influence
INAC	Indian and Northern Affairs Canada
ISF	Infrastructure Stimulus Fund
LCD	Litres per Capita per Day
MCPA	2-Methyl-4-Chlorophenoxy Acetic Acid
MWWE	Canada-wide Strategy for Municipal Waste Water Effluent
NTU	Nephelometric Turbidity Units
OCB	Operator Certification Board
OCP	Official Community Plans
PCAB	Provincial Council of Agriculture Development and Diversification (ADD) Boards – now known as Simply Agriculture Solutions Inc.
PCAP	Prairie Conservation Action Plan
PDWA	Precautionary Drinking Water Advisory

PPWB	Prairie Provinces Water Board
PT Base	Provincial Territorial Base Fund
RHA	Regional Health Authority
RWQP	Rural Water Quality Program
SARM	Saskatchewan Association of Rural Municipalities
SARWP	Saskatchewan Association of Rural Water Pipelines
SCADA	Supervisory Control and Data Acquisition
SCWMC	Spirit Creek Watershed Monitoring Committee
SIAST	Saskatchewan Institute of Applied Science and Technology
SIGI	Saskatchewan Infrastructure Growth Initiative
SPI	The Statement of Provincial Interest Regulation
SUMA	Saskatchewan Urban Municipalities Association
SWWA	Saskatchewan Water and Wastewater Association
WEBs	Watershed Evaluation of Beneficial Management Practices sites
WQI	Water Quality Index

Appendix B – 25 Year Water Security Plan Report for 2013-14

Action Number	Action Description
1.1a	Promote adoption of best conservation and efficiency practices and technology through education, regulations, water licence conditions and new programming **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: No activity, deferred to future years
1.1b	Investigate pricing strategies as a means of promoting water conservation **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Water Pricing Study initiated with Meyers Norris Penny. Refer to Action Item 1.2c.
1.1c	Work with partners to promote research and development of innovative technology that improves the efficient use of water **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: No activity, scheduled for future year
1.2a	Evaluate existing water supplies and future demands for the next 25 years and beyond to determine the need for new infrastructure across the province **Completion Target Year: 2016 and Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Work complete on the Upper Qu'Appelle system. Water demand study is complete.
1.2b	Investigate alternative measures to increase the delivery of water from Lake Diefenbaker to Buffalo Pound Lake, including evaluation of the feasibility of the Qu'Appelle South irrigation project **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Engineering consultant completed conceptual level evaluations of alternate conveyance options and is preparing feasibility level designs of three in-valley conveyance options. The study is scheduled to be complete in June of 2014.
1.2c	Examine alternative ways of instituting the concept of "user-pay" with respect to the development of additional provincially owned, multi-purpose water supply infrastructure **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Meyers Norris Penny contracted to examine water pricing.
1.3a	Develop a modern system of water allocation, including a new allocation policy and regulations **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA has developed concepts for new policy and legislation on allocation and is preparing for stakeholder consultations.

Action Number	Action Description
1.3b	Review existing water rights licences and assess current water use **Completion Target Year: 2014 (priority areas)** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Water use evaluation for 2012 by sector and by watershed completed. Review of existing industrial purpose water rights 80% completed.
1.3c	By watershed, determine the existing use of water, level of protection of environmental flows, how much water is available for future allocation, and identify areas where water scarcity may be a factor **Completion Target Year: 2014 (priority areas)** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Water availability models completed for Souris River, Qu'Appelle River and the Saskatoon Southeast Water Supply System. Lake Diefenbaker model to start soon.
1.4a	Work with Canada to continue to assess and seek funding support for further irrigation opportunities **Completion Target Year: Ongoing** **LEAD AGENCY: MINISTRY OF AGRICULTURE** **Status**: Growing Forward 2 program initiated – fed/prov. program investing $388 million over 5 years on strategic initiatives including irrigation development.
1.4b	Develop an irrigation strategy that prioritizes opportunities for infill and new irrigation projects for development and assess the need for irrigation infrastructure rehabilitation **Completion Target Year: 2014** **LEAD AGENCY: MINISTRY OF AGRICULTURE** **Status**: Draft Saskatchewan Irrigation Strategy completed and in consultation/approval phase.
1.4c	Work with Canada to transfer ownership of federal irrigation projects to local patrons **Completion Target Year: 2017** **LEAD AGENCY: MINISTRY OF AGRICULTURE** **Status**: Federal-provincial discussions are underway.
1.4d	Develop new criteria for allocation licensing based on best practices and new technologies to sustainably support irrigation **Completion Target Year: 2016** **LEAD AGENCY: MINISTRY OF AGRICULTURE** **Status**: Completed joint LEAN exercise with Ministry of Agriculture to improve coordination between agencies and improve client service in delivery of the irrigation development assistance administered by Agriculture and the water right process administered by the WSA.
1.5a	Continue work with research partners on climate change impacts to identify possibilities for adaptation **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA successfully completed several projects on climate change in partnership with Alberta and Manitoba and financial support from NRCAN.

Action Number	Action Description
1.6a	Develop detailed aquifer maps **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: A charter for the assessment of important groundwater source aquifers in southeast Saskatchewan was developed for consideration of funding under the Water Availability Study. This assessment is considered complementary to the preparation of further detailed aquifer maps.
1.6b	Analyze the water supply situation in the major rivers **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Models have been completed on water supply availability for the Qu'Appelle and Souris River systems. Work has been initiated on determining the supply available from Lake Diefenbaker as part of the South Saskatchewan River system.
1.6c	Determine the existing water use by sector and delineated by the major basin **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Completed as part of Action 1.3b; the water use information will be available on the WSA website in 2014.
1.6d	Examine projected water demand by sector within major basins to the year 2060 **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Water Demand Study completed. Study report posted on the WSA website.
1.6e	Identify environmental flows to support the aquatic ecosystem **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Environmental flow assessments imitated in the Qu'Appelle system in summer 2013 and continuing in 2014 targeting fish habitat and water quality, and development of a decision support tool.
1.7a	Determine economic value of water in alternative uses **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: EOI for a Study on Value of Water closed April 1, 2014. Steering Committee from WSA, Agriculture, Economy, and SaskPower reviewing proposals
1.7b	Assess how the economic value of water could be used in allocation decision making **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Request for proposals on Value of Water Study now complete. The Value of Water Study will be initiated in 2014-15 when the consultant selection process is complete.

Action Number	Action Description
2.1a	Review and update the province's approach to safe drinking water, including consideration of the 2002 Laing Report and the 2002 Safe Drinking Water Strategy **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: A legislative discussion document on drinking water has been prepared as an initial step. Further evaluation scheduled for 2014-15 fiscal.
2.1b	Investigate and encourage opportunities for regional water treatment plants and distribution pipelines to increase access to, and protection of, high quality drinking water **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Encouraged through discussion with project proponents, subdivision application reviews and work with funding agencies such as Government Relations. No requests on regional project opportunities.
2.1c	Evaluate the financial needs of communities for operation, maintenance and renewal of water infrastructure **Completion Target Year: 2014** **LEAD AGENCY: MINISTRY OF GOVERNMENT RELATIONS** **Status**: Government Relations has initiated discussion and follow-up on an asset management approach.
2.1d	Develop a strategy to encourage communities to renew drinking water infrastructure **Completion Target Year: 2015** **LEAD AGENCY: MINISTRY OF GOVERNMENT RELATIONS** **Status**: Work underway. Government Relations has initiated discussion and follow-up on an asset management approach.
2.1e	Assess, with federal and First Nations governments, opportunities for the province to provide infrastructure, including connections to regional water systems, and technical and inspection services on reserves on a cost-recovery basis **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA developed scope of actions with SaskWater and is encouraging use of regional services through discussion with other provincial agencies on regulations associated with federal Bill S-8, Safe Drinking Water for First Nations. WSA is also holding discussions with affected clients and providing drinking water educational materials.
2.2a	Review and rationalize the regulatory regime applying to semi-public systems **Completion Target Year: 2015** **LEAD AGENCY: MINISTRY OF HEALTH / WATER SECURITY AGENCY** **Status**: To be initiated in 2015-16.

Action Number	Action Description
2.2b	Support research on water treatment technologies for point of use water systems **Completion Target Year: Ongoing** **LEAD AGENCY: MINISTRY OF HEALTH / WATER SECURITY AGENCY** **Status**: Initiated work on a WSA evaluation of Point of Use/Point of Entry water treatment devices currently in use on the Coteau Hill rural water pipeline and data collection is underway. WSA also has contracted an independent engineering two phase study on the selection and use of Point of Entry Water treatment devices for provision of drinking water provided by raw water pipelines in rural Saskatchewan.
2.3a	Implement an effective education and information strategy to raise awareness of drinking water safety issues, including information on proper well management, system operation and maintenance, water quality testing, and identification of and solutions for ground water quality problems **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: No progress
2.3b	Encourage testing of private water supplies, including testing for heavy metals **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: No progress
2.3c	Provide water testing and treatment advice in at risk locations during emergency events such as flooding that pose a high risk of drinking water contamination **Completion Target Date: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Private wells flooded in spring 2013 have been tested and advice provided to users.

Action Number	Action Description
3.1a	Evaluate the status of existing municipal wastewater facilities to determine needs for upgrades **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: • Completed evaluation of risk assessments for wastewater systems subject to the Wastewater System Effluent Regulations and the Canadian Council of Ministers of the Environment Canada-wide Strategy for Municipal Wastewater Effluents. • Tracking status of municipal wastewater facility for compliance with standards as a means to direct needed upgrading priorities. • Reviewing wastewater capacity during subdivision reviews.
3.1b	Develop an agreement with Environment Canada for coordinated implementation of the Canadian Council of Ministers of the Environment Municipal Waste Water Effluent Canada-Wide Strategy and the Federal Wastewater System Effluent Regulations **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Fourth face-to-face meeting held with Environment Canada in February 2014. A draft administration agreement for delivery of the Wastewater System Effluent Regulations and associated resource contributions by Environment Canada was under development at the end of the fiscal year.

Action Number	Action Description
3.1c	Develop a strategy to encourage the renewal of municipal wastewater treatment infrastructure to ensure protection of water quality in receiving water bodies **Completion Target Year: 2015** **LEAD AGENCY: MINISTRY OF GOVERNMENT RELATIONS** **Status**: Work underway. Government Relations has initiated discussion and follow-up on an asset management approach. WSA may support through permit requirements.
3.1d	Develop coordinated policies to reduce risk of water contamination that may result from residential wastewater management in high density rural developments and cottage subdivisions **Completion Target Year: 2014** **LEAD AGENCY: MINISTRY OF HEALTH / WATER SECURITY AGENCY** **Status**: To be initiated in 2014-15
3.1e	Define water quality objectives, including nutrient-related objectives, for surface water bodies and watercourses in the province, beginning with the highest priority systems and including work on key transboundary sites **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Development of transboundary site objectives continues in collaboration with Prairie Provinces Water Board Committee on Water Quality (PPWB COWQ). Water quality surveys of the Qu'Appelle system were initiated in summer 2013 and continue in 2014 to develop a nutrient budget and inform development of water quality objectives. Analysis and interpretation of Baseline Environmental Monitoring of Lower Order Streams in Saskatchewan (BEMLOSS) and primary station water quality data initiated. Analysis and interpretation of Watershed Evaluation of BMP (WEBs2) water quality data underway led by Agriculture and Agri-Food Canada (AAFC).
3.1f	Implement a recreational lake water quality monitoring program for swimming areas at lakes across the province **Completion Target Year: 2014** **LEAD AGENCY: MINISTRY OF HEALTH** **Status**: MOH designed and initiated monitoring of select recreational lakes. WSA reviewed initial results of Ministry of Health pilot from summer 2013. Study ongoing.
3.1g	Provide information and encourage the implementation of beneficial land and water management practices to reduce non-point sources of nutrients and other contaminants to surface and groundwater **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: • Provided policy development, technical advice and field delivery support to Ministry of Agriculture (MoA) on surface and groundwater protection related practices delivered in the Farm Stewardship Program. • Delivered and supported North American Waterfowl Management Plan programming which include conservation and restoration of wetlands and upland habitats. • Continued a strategic partnership with MoA. MoA entered into 5 year contracts with watershed stewardship groups funded by WSA. These groups are the primary delivery agencies for MoA programs to protect surface and groundwater from agricultural impacts.

Action Number	Action Description
3.1h	Complete the Boreal Watershed Initiative **Completion Target Year: 2016** **LEAD AGENCY: MINISTRY OF ENVIRONMENT** **Status**: Ministry of Environment continued under the Boreal Watershed Strategy to assess and maintain the ecological integrity of Saskatchewan's northern watersheds. Work includes monitoring for uranium and other contaminants to ensure safety of traditional foods, examining current air quality through continuous monitoring, and through wet and dry deposition monitoring (precipitation) and historical air quality by taking tree cores, study of contaminants in loons, gull eggs, otters, and dragonflies, research on benthic invertebrates as indicators of water quality and completion of assessment of soil impacts from acid precipitation.
3.1i	Define a strategy to reduce the contamination risk posed to groundwater sources by abandoned water wells **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Complete - Worked with MOA to implement a water well decommissioning beneficial management practice for rural residents funded under the Growing Forward 2 framework. WSA will provide ongoing support and encouragement for the 11 watershed stewardship groups to deliver as many decommissioning projects as possible in the 2013-2017 program.
3.1j	Negotiate with Canada a new commitment to continue the Environmental Farm Plan Program, with a focus on nutrient management and protection of water supplies **Completion Target Year: 2013** **LEAD AGENCY: MINISTRY OF ENVIRONMENT** **Status**: Complete
3.2a	Prepare a new provincial wetland policy that includes an assessment of the status of wetlands in the province and identification of conservation priorities, including a strategy to retain and restore wetlands **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Assessment of provincial wetland status continues through wetland and drainage inventory, and consideration of Environment Canada drainage intensity data as part of revision of the Saskatchewan North American Waterfowl Management Program (NAWMP) Implementation Plan. Pilot implementation of the draft Ministry of Environment wetland mitigation framework is underway opportunistically.
3.3a	Establish site-specific objectives for environmental flows in priority surface water systems **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Environmental flow assessments initiated in the Qu'Appelle system in summer 2013 and continuing in 2014 targeting fish habitat and water quality, and development of a decision support tool.
3.3b	Prepare an aquatic alien species strategy to identify and address significant threats to biodiversity and ecosystem health **Completion Target Year: 2015** **LEAD AGENCY: MINISTRY OF ENVIRONMENT** **Status**: WSA has forwarded potential implementation actions to Ministry of Environment for review. WSA has participated on the NorthWest Partnership – Alien Invasive Species working group.

Action Number	Action Description
3.3c	Develop protocols with the Department of Fisheries and Oceans to ensure the ongoing protection of fish habitat under the new federal Fisheries Act **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA has received updates from the Department of Fisheries and Oceans (DFO) regarding the implementation of the new *Fisheries Act* nation-wide which indicate that regulatory delegation or equivalency will not be pursued. Discussions specific to Saskatchewan are being initiated with DFO and Saskatchewan Ministry of Environment.
3.4a	Update the source water protection planning process to achieve resilient, locally appropriate source water protection plans that are informed by science to identify key local threats to source water protection, address drinking water source protection, and identify achievable solutions for implementation **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: In Progress – WSA developed and implemented a renewed approach to planning beginning with Lower Qu'Appelle River Watershed (published Mar. 2013) and this is presently being applied to the Old Wives Lake Watershed planning project and will evaluate this updated model at the completion of the Old Wives plan in 2014-2015.
3.4b	Work with Saskatchewan Association of Watersheds to more clearly identify the future roles and responsibilities of watershed and aquifer planning groups, including the renewal of source water protection plans **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: In Progress – WSA officials have met with SAW, sponsored and participated in a strategic business planning exercise for SAW in 2013-2014. No progress was made on plan renewal in 2013-2014.
3.4c	Evaluate the need to expand source water protection planning to additional watersheds or aquifers **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: This is part of a comprehensive review of the watershed planning program being undertaken in 2014-2015.
3.4d	Assess and renew the approach to implementing source water protection plans to ensure that threats to source water are mitigated into the future **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Work has been initiated to develop an improved watershed planning model with an emphasis on the protection of municipal drinking water sources. Eleven Source water protection plans have been completed covering 88% of the provincial population and there is increasing interest in developing a plan renewal process. The approach to be taken, and consideration for plan development in additional planning areas, will be part of this process over the coming year.

Action Number	Action Description
4.1a	Implement the Water Security Agency's 10 year plan for infrastructure rehabilitation and dam safety **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: • The 10 year plans were periodically reviewed and updated throughout the year. • Significant infrastructure rehabilitation included enlarging and lining portions of the M1 Canal and constructing two concrete control structures, completing rehabilitation of the Moose Mountain Dam, replacing spillway gate hoist motors, motor control cabinets, and electrical cabling at Gardiner Dam and repairing a major erosion area on the Boundary-Rafferty Diversion Channel. • Significant dam safety accomplishments included drafting an Emergency Response Plan for Rafferty Dam and commissioning an independent dam safety review of Alameda Dam.
4.1b	Establish legislative requirements for dam safety for both public and private dams and identify long term strategies for compliance **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: A discussion paper has been drafted for planned consultations on new water legislation.
4.1c	Complete emergency preparedness plans for major Water Security Agency dams **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Complete. Emergency Preparedness Plans for Rafferty, Alameda, Gardiner and Qu'Appelle River dams prepared and reviewed with stakeholders.
4.2a	Review existing reservoir operating plans and update them on a priority basis **Completion Target Year: 2014 (priority)** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Assessment of operating scenarios for the Lake Diefenbaker Operating Plan is underway with a draft Operating Plan is expected in 2014-15.
4.2b	Negotiate transfer of federally owned infrastructure to the province where appropriate to meet provincial interests **Completion Target Year: 2017** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Formal confirmation was obtained from Agriculture and AgriFood Canada (AAFC) that it wishes to transfer its water management infrastructure in Saskatchewan to the province. The Craven, Valeport and Crooked Lake water control structures were transferred from AAFC to WSA late in 2013-14.

Action Number	Action Description
5.1a	Develop improved flood forecasting tools **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: This action is to be initiated in 2014-15
5.1b	Develop a provincial emergency flood response plan that addresses community, individual and local government responsibilities **Completion Target Year: 2014** **LEAD AGENCY: MINISTRY OF GOVERNMENT RELATIONS** **Status**: Not yet initiated
5.1c	Develop a strategy to ensure communities and the public have access to flood hazard information and are aware of potential flood risks **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Not yet initiated
5.1d	Undertake a flood risk assessment of municipal drinking water and wastewater infrastructure **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Systems at risk of flooding understood at Environmental Project Officer level. A formal survey-based assessment has not yet been initiated and remains pending.
5.1e	Encourage municipalities to map flood risk areas associated with under-capacity of wastewater and storm sewer infrastructure as projected in the Insurance Bureau of Canada's report on impacts associated with climate change **Completion Target Year: Ongoing** **LEAD AGENCY: MINISTRY OF GOVERNMENT RELATIONS** **Status**: Not yet initiated – WSA waiting for GR input
5.1f	Implement the flood protection and prevention measures established in The Statements of Provincial Interest Regulations into local official community plans and zoning bylaws **Completion Target Year: Ongoing** **LEAD AGENCY: MINISTRY OF GOVERNMENT RELATIONS** **Status**: Being implemented as communities renew their official community plans and zoning bylaws. 62 new official community plans were submitted during 2013-14.

Action Number	Action Description
5.1g	Pursue negotiations with Canada to develop and implement a new long term federal-provincial program for flood mitigation as part of an all hazards program **Completion Target Year: 2014** **LEAD AGENCY: MINISTRY OF GOVERNMENT RELATIONS** **Status**: In its 2014 budget, the federal government indicated its intent to develop a federal provincial program, but no substantive negotiations have occurred.
5.2a	Assess the range of alternatives and implement strategic actions to manage drainage **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Online drainage consultation process undertaken and a range of alternatives for drainage legislation, management practices and enforcement options were discussed. Insightrix is preparing a paper to help WSA identify alternatives and develop strategic actions for the future.
5.2b	Develop a results-based drainage works approval process and associated enforcement strategy, including the potential use of financial penalties **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Held broad consultations with Online Drainage Forum. A discussion paper for further consolations is nearly complete.
5.2c	Develop new strategies to effectively address excessive moisture concerns on agricultural lands, including provision of information and advice on proper drainage design and management and consideration of the benefits of wetland retention and restoration **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Work underway. WSA is working with a number of communities to create new Conservation Area Authorities to collectively address excess water challenges.
5.3a	Develop a coordinated provincial drought response plan that includes monitoring, preparedness, response, and recovery approaches **Completion Target Year: 2014** **LEAD AGENCY: MINISTRY OF AGRICULTURE** **Status**: Ministry of Agriculture led development of terms of reference for the project. An inter-agency committee will be formed in 2014; finalization of a drought response plan is anticipated in 2016.
5.3b	Develop new regulations for water allocation to help manage water shortages during droughts **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Policy development is underway.

Action Number	Action Description
6.1a	Complete a strategic review of major monitoring programs, including surface water, groundwater and water quality **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: This action to be initiated in 2014-15
6.1b	Develop an integrated geographically referenced database to provide government-wide and public access to water-based information **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: The product to provide the framework for these actions has been selected and WSA is currently in the pre-purchasing phase.
6.1c	Consolidate precipitation data and information through the development of cooperative agreements and partnerships with government and non-government organizations **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: • Agreement now in place with Weather Innovations Network to provide rainfall data relative to Saskatchewan to WSA and to water management agencies in the USA. • Cooperated with Canada and the Ministry of Agriculture to initiate the CoCoRaHS program (volunteer network to collect snowfall data) in Saskatchewan.
6.2a	Establish protocols for informing the public during emergencies related to flood, drought, infrastructure failure, and water quality and drinking water concerns **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: No activity
6.2b	Develop a user-friendly water information portal on the new Water Security Agency web site to make information on water and water management issues widely available **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: The product to provide the framework for these actions has been selected and WSA is currently in the pre-purchasing phase.
6.2c	Report on progress in implementing the 25 Year Water Security Plan **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Reported by means of this document.
6.2d	Publish the State of the Watershed Report every five years in an expanded form which can be applied by government in the renewal of the 25 Year Saskatchewan Water Security Plan and by the public in decision making **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA has initiated review of the format to increase the reports value in decision making.

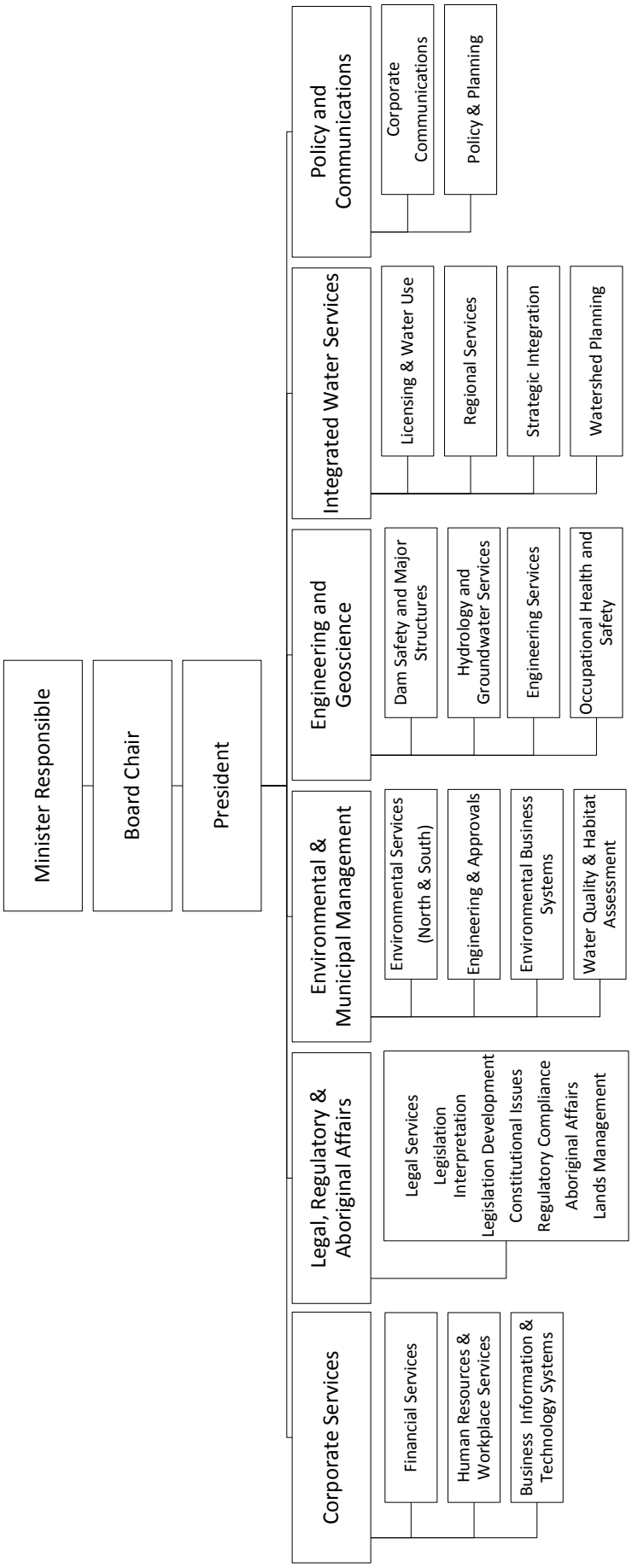
Action Number	Action Description
6.3a	Support the work of the Global Institute for Water Security at the University of Saskatchewan in their assessment of the water supply and quality issues in the South Saskatchewan River **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA has agreed to support research by Dr Hudson on water quality at Lake Diefenbaker in 2014.
6.3b	Identify opportunities to collaborate with external academic and research partners on defining and undertaking strategic research initiatives **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: • WSA met with GIWS on several occasions and identified the opportunity to support research by Dr. Hudson on water quality at Lake Diefenbaker. WSA also supported work of Dr. H. Baulch (U of S) on understanding lake metabolism and algal blooms - Buffalo Pound Lake. Collaborated with Dr. J. Stavrinides (U of R) on use of genomics in natural waters to characterize microbial communities in water bodies. • WSA provided a letter of support and reviewed proposals for the Canadian FloodNet research project, under which research on flood estimation, forecasting, monitoring, mitigation and management would be undertaken. A decision on project funding by NSERC is being awaited. • WSA engaged U of S engineering staff to evaluate various operating scenarios for Lake Diefenbaker. This work will provide independent validation of WSA's hydrologic modelling. • WSA reviewed and provided input to a Groundwater research strategy advanced by the Global Institute for Water Security.

Action Number	Action Description
7.1a	Develop modern and comprehensive water legislation **Completion Target Year: 2014** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Work is underway on developing new water legislation. WSA has started internal consultations on parts of the proposed legislation and developed discussion papers for planned stakeholder consultations.
7.2a	Establish provincial Deputy Ministers' Water Committee **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Committee not established during fiscal year.
7.2b	Work with Canada to identify opportunities to improve regulatory and program coordination and collaboration **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Developed and signed a protocol agreement with Environment Canada and Fisheries and Oceans that addresses communications and cooperation in relation to the overlapping jurisdictions between Canada and the province on a day to day basis with a special emphasis on emergent situations such as flood and drought.
7.3a	Develop improved models for engagement with First Nations and Métis to better understand their perspectives on water and water management and facilitate effective working relationships **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA has initiated this work by identifying training opportunities including collaborative problem solving (Interest-based) and policy and practices associated with the legal duty to consult policy to offer to staff identified as likely to be involved in delivery of the WSA's duty to consult activities
7.3b	Where water management decisions may have an adverse impact on the exercise of treaty and aboriginal rights and pursuit of traditional uses, consult with First Nations and Métis in accordance with the First Nations and Métis Consultation Policy Framework and the legal duty to consult **Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA undertook pre-consultation and consultation processes with a number of First Nation and Métis local governments regarding regulatory approvals or planning initiatives (e.g., Mackenzie River Basin Bi-lateral Agreement) in an attempt to identify potential adverse impacts to treaty or Aboriginal rights and to seek options for avoiding or mitigating such impacts.
7.4a	Establish the Provincial Water Council with sector-based representation **Completion Target Year: 2013** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Committee not established during fiscal year.

Action Number	Action Description
7.5a	Investigate new approaches to engage the public and local governments on water issues and decisions of importance to them **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Contracted with Insightrix to implement an online forum on agricultural drainage issues as an innovative way to involve a large number of people in a discussion on this issue. Work of the forum was nearing completion at end of the fiscal year.
7.6a	Continue to work with the Prairie Provinces Water Board to evaluate the resiliency of the Master Agreement on Apportionment **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Through annual face-to-face and teleconference meetings, the Prairie Provinces Water Board provides a forum to discuss interprovincial water matters, both upstream and downstream of Saskatchewan. In addition to the regular discussions about water quantity apportionment and adherence to water quality objectives, of note during the past year is that significant progress has been made on the development of a new groundwater (Schedule F) to the Master Agreement on Apportionment and amendments to the Schedule E water quality objectives.
7.6b	In support of the Mackenzie River Basin Board, negotiate bilateral agreements with Alberta and North West Territories **Completion Target Year: 2016** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Underway – Progress was made in 2013-2014 toward developing a bilateral agreement with Alberta through meetings and undertaking significant technical and administrative work. Work is continuing in 2014-15An agreement with NWT will be developed following completion of the Alberta-Saskatchewan agreement.
7.6c	Continue to work with the International Souris River Board of the International Joint Commission to establish an enhanced operating plan for Rafferty and Alameda reservoirs **Completion Target Year: 2015** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: • Served on a Task Force of the International Souris River Board (ISRB) to develop a Plan of Study to create an enhanced operating plan for Rafferty and Alameda reservoirs • Assisted in obtaining approval of the International Joint Commission for the Plan of Study • Assisted efforts of the IJC to obtain funding from Canadian and U.S. federal governments for the Plan of Study
7.6d	Continue to support the work of the Council of the Federation Water Stewardship Council to use information and experience from other jurisdictions across Canada to address water problems in Saskatchewan **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Participated in the Water Stewardship Committee of the COF. This committee completed its planned work and is being wound down. WSA also served as part of the committee developing "A State of Private Drinking Water Wells in Canada: A Human Health Risk Perspective" and on the committee studying the Value of Water.

Action Number	Action Description
7.6e	Continue to work with the Canadian Council of Ministers of the Environment to address emerging water issues common to all jurisdictions **Completion Target Year: Ongoing** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: WSA served as co-chair of The Canadian Council of Ministers of the Environment (CCME) Water Management Committee during 2013-14. WSA member serves as chair of the Federal-Provincial-Territorial Committee on Drinking water. Work in these areas ongoing.
7.7a	Undertake comprehensive water management analyses for priority surface and groundwater systems **Completion Target Year: 2016 (non-priority areas)** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Not yet initiated, working on priority systems first.
7.7b	Implement new watershed modeling and data base management systems to allow efficient evaluation of new requests for water and ensure that cumulative effects are considered **Completion Target Year: 2014 (priority areas)** **LEAD AGENCY: WATER SECURITY AGENCY** **Status**: Water availability models completed for Souris River, Qu'Appelle River and the Saskatoon Southeast Water Supply System. Work on a Lake Diefenbaker model will start soon.

Appendix C – Organizational Structure



Appendix D-Regional Boundaries & Office Locations