

DRAFT WORKING PAPER
RED DEER RIVER MUNICIPAL USERS GROUP POTENTIAL FUTURE ACTIONS
(January 2020)

1. Working Paper Purpose

The purpose of this working paper is:

- To facilitate discussion by committee formed by the RDRMUG (MUG) to consider future tasks and actions for MUG to undertake in the forthcoming years to continue to promote the availability of a sufficient supply of good quality water to sustain vibrant and growing communities far into the future.

This purpose addresses the future water needs of communities, both within and outside the Red Deer River Watershed, that depend on water from the Red Deer River and municipalities served by groundwater. The process to outline, and ultimately approve, and action strategy may involve a review of the structure of the Red Deer River Municipal Users Group, including staffing, support services and general operation.

It is envisioned the committee report to the full membership would address:

- Review past RDRMUG actions and their current status, success or lack thereof
- Outline future challenges related to water use and management related to the Red Deer River watershed
- Suggest future MUG actions, and priorities thereof
- Outline the means to get there – staff, budget, sub-committees, outreach, partners, etc.

2. Timeline

- Initial committee meeting: January
- Second committee meeting: February
- Report to MUG: March.

3. Background

Since MUG began meeting in 2004, this association of urban and rural municipalities continues to serve to fulfill its initial purposes, being:

- A forum for municipalities to discuss relevant water matters, and
- An advocate for municipal water interests and needs.

In pursuing these purposes, MUG has been fully supportive of the three goals in Alberta's *Water for Life Strategy*:

- (a) Safe, secure drinking water
- (b) Reliable, quality water supplies for a sustainable economy, and
- (c) Healthy aquatic ecosystems.

While performing various functions over the years, MUG has keyed on three major pursuits:

- Actively promote municipal interests in the supply, use, delivery and quality of water.
- Seek that reliable quality water supplies are available for sustainable and growing municipal economies.
- Encourage the retention, and restoration where required, of healthy and balanced aquatic ecosystems.

4. MUG Reports on Major Initiatives

MUG has paid considerable attention to Red Deer River water quantity and water quality, of course including the factors that influence water availability.

4.1 Quantity - water assurance

Regarding the supply of water for municipalities, in 2008 the RDRMUG commissioned a Water Assurance Study on the Red Deer River. Regarding the context of surface water supplies within the Red Deer River watershed, this comprehensive study forecast future municipal water needs by municipalities while being cognizant of the needs of other water use sectors (e.g. agriculture, industry, recreation). This led to a key initiative - being to pursue water security for present and future municipalities that rely on the Red Deer River for their municipal water supply. Since 2013, MUG has been promoting (through Alberta Environment and Parks) the Provincial Government to approve a Crown Reservation under the Water Act to reserve water allocations from surface water within the Red Deer River Basin to supply long term municipal needs.

4.2 Quality – watershed health and source water protection

Regarding water quality, MUG recently completed four reports related to integrating source water protection and watershed conservation into various aspects of municipal planning in the Red Deer River watershed for the benefit of all future water users and the environment. Maintaining source water quality and conserving the watershed is an integral part of MUG's strategic goal to secure sufficient water to support sustainable communities while also maintaining a healthy watershed. A key product was a statutory plan guide that promotes integrating land and water policies within a statutory plan section titled 'Natural Assets'.

5. Other MUG Activities

During its active existence MUG has:

- Contributed to an Atlas of the Red Deer River Watershed (prepared by the Red Deer River Watershed Alliance).
- Supported the interbasin transfer of Red Deer River to communities east of the Town of Stettler, north to Blackfalds, Lacombe and Ponoka and north to Bashaw.
- Successfully opposed the interbasin transfer of water south to CrossIron Mills, which is located in the Bow River watershed.
- Successfully questioned the initial large volume of water in the Special Areas Water Supply Plan, then generally favoring the project with a smaller volume.
- Provided input into a ten year review of the South Saskatchewan River Basin Water Management Plan.
- Input into WaterSmarts' Adaptation Roadmap for Sustainable Water Management in the South Saskatchewan River Basin Water Management Plan. An aspect of input was to promote consideration of additional water storage of Red Deer River water.
- Submissions to the Provincial Government to support floodproofing in highly prone reaches of the Red Deer River, most notable Drumheller and Sundre.
- Encouraged municipalities to promote water conservation, including the effective use of water.
- Provided input to the Red Deer River Watershed Alliance's Blueprint (phase one of a Integrated Watershed Management Plan).
- Supported water related education presentations and seminars, as part of RDRMUG meetings and sub-watershed workshops, as well as those by other agencies (e.g. Red Deer River Watershed Alliance).

6. Current Influences and Challenges

The following are some of the current influences and challenges, both present and future, to consider in contemplating MUG's future water related actions, and the priorities thereof.

Previously identified

- Water security (assurance of supply)
- Water quality
- SSRB water management plan
 - ** Red Deer River basin allocation limits
 - ** Water conservation objectives
 - ** Sub-basin (Red Deer, Bow, Oldman) 'tensions'
- Regionalization of water supply
- Regionalization of wastewater treatment
- Nutrient loads (agriculture, municipal)
- Sediment loads (natural and human induced)
- Limited water storage
- Floods
- Drought potential
- Wildfire
- Climate change
- Ongoing growth and development
- Stresses on/loss of sensitive lands
- Loss of natural cover
- Pipeline water course crossings
- River water temperature (mostly lower reaches)
- Dissolved oxygen levels
- Invasive species
- Groundwater contamination
- Floodplain development
- Pesticides and pharmaceuticals
- Lack of proactive Provincial responses
- Future Red Deer Regional Plan

Others (to be added)

7. Previously Identified Potential Actions

7.1 2014 – 2015 Potential Actions

- Selective update of the Water Assurance Study (not undertaken)
- Water 101 – a Primer for Municipalities (completed)
- Crown Reservation (Casual contact with Province)
- Water storage (no action)
- Water conservation (partly addressed in Toolkit and Municipal Statutory Plan Guide)
- Water sharing plan (drought related) (no action)
- River hazards (encourage Province action e: flooding)

7.2 2018 – 2022 Potential Actions

- Water Assurance (Crown Reservation) (Casual contact with Province)
- Integrating Land Use Planning and Source Water Protection (reports completed)
- Water Security (no action)
- Climate Resilience (no action)
- Source Water Protection (no action)

APPENDIX – PREVIOUS POSSIBLE ACTION OUTLINES (2014-2015)

1. Selective update of the Water Assurance Study

Deliverable

- Priority Action Report

Why

- 2008 report – some aspects possibly out of date
- What actions have been taken – accomplishments (on priority matters only?)
- Need to re-confirm and/or revise Identify key issues/concerns of municipalities

Some Tasks

- Scan entire report
- Scan actions/accomplishments since 2008
- Review report recommendations and place priorities on actions
- Confirm/revise 2014 priorities

2. Crown Reservation

Deliverable

- 2014 action plan

Why

- Long term availability of water is crucial to future municipal well-being

Some Tasks

- Consider updated information from #1 above - Selective update of the Water Assurance Study
- Reconsider rationale and affirm/strengthen
- Prepare presentation materials
- Determine who to meet to encourage their support (through their improved understanding) e.g. RDRWA
- Re-establish a good working relationship with AESRD regional staff
- Meet Minister of AESRD (can be about more than a Crown Reservation)
- Meet MLAs (can be about more than a Crown Reservation)

3. Water Storage

(note: identified in the South Saskatchewan Water Management Plan as a WPAC role)

Deliverable

- RDR Basin Water Storage Report

Why

- Some municipalities and regional systems may not be able to withdraw water during periods of low flow (winter, drought) as water conservation objectives (an/or instream flow needs) would not be met
- Need a clearer understanding of potential water deficiencies – when, how long, how much
- Need a clearer understanding of needs (how much storage, whole basin and sub-basin)
- Better understanding of potential sites (advantages/disadvantages)
- Greatest benefits - individual municipal or sub-basin or basin wide actions
- What are options to storage (that could delay creating new storage)

Some Tasks

- Identify the purposes of increased storage
- Improve understanding of needs (how much storage, whole basin and sub-basin)
- Identify and evaluate potential sites (much has been done previously)

- Identify how to achieve greatest benefits - individual municipal or sub-basin or basin wide actions
- Discuss the options to storage (that could delay the need to develop new storage)

4. Municipal Water Conservation

(note: identified in the South Saskatchewan Water Management Plan as a WPAC role)

Deliverable

- Municipal Water Conservation Report on the actions and accomplishments (successes) to date by municipalities across the basin

Why

- Need to demonstrate municipalities are taking water conservation seriously
- Encourage beneficial actions by all municipalities using water (from the Red Deer River system and groundwater)

Some Tasks

- Canvass all municipalities what actions have been taken (municipal and other)
- Report on water use conservation (e.g. use per capita)
- Report on cost savings to community and users, where applicable
- Report on challenges and successes
- Report on what has been learned

5. Water Sharing Plan

Deliverable

- A draft Water Sharing Plan

Why

- If there is water shortages (both short and longer periods) many licence holders could have their licences suspended (i.e. they could not withdraw water)
- It is better to have a plan in place on how to share water during times of shortages than to have to initially act during a time of shortage

Some Tasks

- Establish a multi-sector working committee
- Identify water allocations and priorities across the basin
- Identify issues and future scenarios
- Explore options to share water under different scenarios
- Identify tentative agreements for water sharing

7. River Hazards

Deliverable

- Committee actions to address needs and solutions

Why

- Erosion, flooding and disaster (e.g. pipeline breaks) issues continuously face the Red Deer River and its tributaries

Some Tasks

- Identify issues
- Seek options to resolve issues and preferred actions plans
- Ensure a disaster warning system is in place and educate municipalities re: roles

APPENDIX – PREVIOUS POSSIBLE ACTION OUTLINES (2018-2022)

#1. Water Allocation Assurance (Crown Reservation)

Deliverable

- Support of municipalities and MLAs for a Crown Reservation
- Recommendation by the Minister of Environment and Parks to approve a Crown Reservation

Why

- A guarantee of long term water availability is crucial to sustainable municipal well-being

Key Actions

- Review past actions
- Revise/update presentation materials
- Gain letters of support from municipalities
- Advise RDRWA of continued efforts
- Meet with Alberta Environment and Parks senior and regional staff
- Meet newly and re-elected MLAs within the watershed
- Meet the new/continuing Minister of Environment and Parks

#2. Integrating Land Use Planning and Source Water Protection

Deliverable

- A report on planning strategies and policies that provides guidance to municipalities, when updating their intermunicipal development plans and municipal development plans to include goals, strategies and policies to promote and undertake land use planning that considers the interrelationships (need, impacts) of land use on water resources, including source water
- The report would address most of the threats identified in MUG's Toolkit for Protecting Source Water Quality in the Red Deer River Watershed

Key Content

- Inter-relationship of land use and water, and thus land use planning and source water management
- Need for a sustainable supply (i.e. quantity) of quality source water
- Threats to source water – natural and human impacts
- Advantages of a collaborative watershed (i.e. multi-municipal) approach
- Key land use planning principles in support of source water protection
- Key strategies and actions
- Sample policies to include in municipal statutory plans
- Community education and engagement (public and municipal administration).

#3. Water Security (related to sustainable supply and drought management)

Deliverable

- A report that identifies strategies and actions to increase the assurance of future water supplies during all seasons to sustain the economy and municipalities, both within the watershed and the municipalities outside served by Red Deer River water while sustaining the quality of the river and aquatic life therein.

Why

- Without sufficient supplies of good quality water, the long economic, social and environmental viability of communities will be in doubt
- Continued economic development, population growth, climate variability (including drought) will stress the ability of communities to be sustainable
- As a vital watershed priority, a long term water security strategy needs to be adopted and implemented by key partners in water management - the Provincial Government, municipalities, water utilities and key water users.

Key Content

- Natural surface water supply: annual, seasonal, annual variations, trends
- Factors affecting the supply of water and its quality
- Future scenarios re: the supply of water (Red Deer River flow – annual and seasonal); including the impacts of climate variability
- Current allocation of water – total and by major water use sectors, in relation to the maximum allocation allowed from the Red Deer River
- Projected water demands (50 years?)
- Identify the implications of low water supplies (seasonal, annual, multi-year)
- Identify implications of high water flows
- Identify the effects of the Red Deer River Water Conservation Objectives (WCOs) on present and future water allocations
- Off-stream storage requirements of major new/expanded developments and for municipal growth to promote water availability year-round.
- The benefits provided by additional water storage within the watershed
- Additional storage options – on-stream and off-stream: general discussion, potentials, advantages, impacts, challenges
- On-stream storage possibilities within the Red Deer River watershed: identify, merits, impacts/challenges
- Off-stream storage possibilities within the Red Deer River watershed: identify, merits, impacts/challenges
- General mention of other ways to promote water security – e.g. water efficiency, net return licences, source water protection, sensitive lands conservation, etc.
- An action plan to go forward

#4. Climate Resilience

Deliverable

A Climate Resilience Action Plan prepared in association with the Municipal Climate Change Action Centre and municipalities within the Red Deer River watershed.

Why

Alberta's climate is changing, as is the climate of the Red Deer River watershed. Climate variability has had many effects, and is projected to continue to do so in the future, possibly more severely. Climate variability will affect the economy (e.g. agriculture, forestry), infrastructure, source water and community livability and sustainability.

Federal, provincial and many local governments are analyzing how climate variability is and will continue to impact the economic, environmental and social viability of regions and communities, and how to prepare and respond to changes. By working together, municipalities in the Red Deer River watershed can efficiently and effectively identify the issues and threats spawned by climate variability, both across the watershed and at municipal levels, and identify

strategies and actions to address and mitigate these impacts. Municipal governments have the responsibility of ensuring the safety, health and welfare of their communities both now and in the future. Understanding and preparing for climate variability is a matter of risk management and good governance.

Some Actions

Through one or more workshops, a team of climate resilience experts, possibly led by All One Sky Foundation in collaboration with the Municipal Climate Change Action Centre, will lead municipal representatives through a process to:

- identify aspects of climate variability impacting municipal sustainability
- outline present and potential future threats of climate variability, including drought
- assess vulnerabilities (likelihood, severity and consequences)
- prioritize risks and identify optional actions
- outline key aspects of climate change resilience action plans (region wide; individual or clustered municipalities).

#5. Well Water Protection

Purpose

For communities that use wells for drinking water, hold one or more workshops to broaden knowledge of well water protection plans and promote the preparation and implementation of these plans.

Why

Protecting the water in wells that serve as the source for municipal drinking water is a key element toward safe drinking water, and therefore an important input to safe drinking water plans.

Some Actions

Once municipalities who want to be involved are identified, hold one or more workshops with the following objectives:

- identify the location of source water wells
- identify impact area boundary (boundaries)
- identify land uses and activities within the impact areas
- identify risks
- identify strategies for managing risks
- identify possible (best) management recommendations
- provide a source water protection plan outline.

#6/7. Surface Source Water Protection

Purpose(s)

To partner with the Province, Red Deer River Watershed Alliance and municipalities to:

1. Prepare a source water protection plan that serves to protect the source waters from the Red Deer River used by the water treatment plants between Dickson Dam and the Nova industrial complex, and

2. Prepare a source water protection plan that serves to protect the source waters from the Red Deer River used by the water treatment plants downstream of the Nova industrial complex, or
3. Prepare a source water protection plan that serves to protect the source waters from the Red Deer River used by all water treatment plants along the river downstream from Dickson Dam.

Key Content

Protecting the water in wells that serve as the source for municipal drinking water is a key element toward safe drinking water, and therefore an important input to safe drinking water plans.

“Source water protection supports the protection and improvement of aquatic ecosystems and the overall health of the watershed. A healthy environment provides a strong foundation on which to build healthy communities and economies. Protecting source water increases the recreation value of the area, reduces public health risks associated with poor water quality, minimizes the cost of treating drinking water, and helps to ensure reliable, quality water supplies into the future. Safe and secure water supplies also contributes to viable commercial, industrial and agricultural operations.” (*Camrose Source Water Protection Plan September 2016*)

Some Actions

- Identify watershed values
- Identify a Source Water Vision
- Identify the source water boundary
- Identify land uses and land use activities within the source water boundary
- Review existing evaluations of water and sub-watershed quality
- Identify risks (threats) to source water quality
- Prioritize the risks (threats)
- Prepare a source water protection plan (goals, strategies, policies, actions, implementation roles)