

BRBC Legislation and Policy Committee

Drought ParticipACTION Workshop: Collaboration in times of severe drought
Workshop
February 23, 2024

Workshop Summary Report: Concerns and Solutions

Table of Contents

Workshop Background 2
Feedback Summary: top ten concerns..... 2
Table of Concerns and Solutions 9

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Workshop Summary Report: Concerns and Solutions

Workshop Background

On February 23, 2024, the BRBC Legislation and Policy Committee hosted a workshop entitled *Drought ParticipACTION: Collaboration in times of severe drought*.

In the morning sessions, participants heard from drought preparedness and response experts from Alberta Environment and Protected Areas; the City of Calgary; Alberta Irrigation Districts Association; Trout Unlimited Canada; and WaterSMART. In the afternoon, following a panel discussion with the experts, participants who were identified by sector were asked to share their concerns in a multi-stakeholder setting about how drought might impact them personally or impact their sector. Once concerns were identified, the participants were asked to suggest potential solutions that, if implemented at the provincial or municipal scale, would help them or their sector when an emergency is declared under section 107 of the Water Act.

The **Feedback Summary** below provides the top ten concerns shared by workshop participants, followed by suggested management and technical solutions to address the concerns.

A list of personal concerns, or concerns that were raised only once during table discussions are also included to provide a summary of the range of concerns about severe drought that are shared by residents in the Bow River Basin.

A **Table of Concerns and Solutions** was used to create the summary, and is provided at the end.

Feedback Summary: top ten concerns

The following two questions were asked of participants:

Question 1: What is the greatest concern for your organization or you personally during a declared drought emergency?

Question 2: Do you have any suggestions for how the Province or your municipality might address that concern? How the province/municipalities balance human/agricultural/ecological needs for water during a declared drought emergency?

The number beside each concern identified below indicates how often a similar issue was raised in workshop discussion feedback reports. The top ten concerns identified by workshop participants were:

- Instream flows and risks to aquatic ecosystem – raised 10 times
- Lack of trust in government monitoring and assessment of risk – raised 7 times
- Lack of communication/education- raised 6 times
- Water for industry/business - raised 6 times
- Abruptness-people won't change behaviours quickly – raised 6 times
- Aquifers and wetlands already depleted by gravel pits and industry- raised 6 times
- Lack of leadership at all government scales – raised 3 times

- Fear of unknown – raised 3 times
- Risk of chaos/violence – raised 3 times
- Water Hoarding - raised 2 times

While participants suggested many management and technical solutions, the four most common solutions for addressing identified concerns were:

- deliberative education and communication;
- third party instream flow monitoring and data sharing;
- conservation and management of natural infrastructure; and
- building trust of government decision-making through transparency, accessibility, and accountability.

Communication of water conservation best practices by municipal governments was suggested as a mechanism to address fears, and was considered a major component of successful municipal drought preparedness and response.

Using the BRBC, WSGs and other watershed management NGOs as resources was also raised as a viable solution for education and outreach, while third party monitoring and review of applications for industrial water use (for example in the gravel and oil and gas industries) was also strongly suggested. Third party input/oversight would improve trust for all sectors.

Participants appreciated the **collaborative approach** taken by the Province in preparing water sharing agreements, and in partnering with WaterSMART for modeling. They support the **principled approach** taken by the City of Calgary in proactive drought preparedness and response planning. **Collaboration and co-ordination** efforts between government, irrigation districts and multi-stakeholders in drought preparedness and response were noted.

Feedback Summary of Concerns and Suggested Solutions

1. ***Instream flows and risks to aquatic ecosystem – raised 10 times***

Management solutions (legislative, policy, programs)

- ✓ Change water management policies; update policies.
- ✓ Review water resource management practices to balance reservoirs; storage capacity; flood mitigation.
- ✓ Ensure that rural municipalities have drought management plans.
- ✓ Demonstrate positive actions and examples of collaboration.
- ✓ Enforcement water restrictions/ laws to protect aquatic ecosystem.
- ✓ Require licenced water users to maintain ecological integrity as condition.
- ✓ Put in place a process to ensure beneficial use of water to ensure licenses are appropriately assigned.
- ✓ Implement ‘Nature based solutions’ including protection of natural areas as well as green urban infrastructure. Restoration of wetlands and riparian areas.
- ✓ Increase funding and support to Land Trusts, especially the ones that focus on protecting the smaller areas, including hydrologically sensitive areas.

- ✓ Provide financial incentives to municipalities to create more Conservation Easements.
- ✓ Catchment-wide planning on dry prairies. Economic decisions limited by water supplies and impacts of withdrawals on ecosystem.
- ✓ Switching to agricultural crops that use less water.
- ✓ Promoting industries that have lower demands for water.
- ✓ Tourism may need to be curtailed in certain areas or practices, for example, no more travel on glaciers.
- ✓ Monitor & enforce existing IOs.
- ✓ Water usage prioritized by need / use.
- ✓ Ensure Watershed Resiliency & Restoration Program grant funds remain available (& are even expanded in amounts available) to Watershed Stewardship groups, as this program is needed & provides a massive return on investment; a huge “bang for your buck”.
- ✓ The Province should require the release of some of the water stored upstream in reservoirs, when they are holding back quite a bit & the downstream flow is drastically reduced

Technical solutions

- ✓ Cover irrigation canals with solar panels.
- ✓ Improve existing water conveyance infrastructure.
- ✓ Monitoring and reporting by third party.
- ✓ Evaluate cost-benefit of natural infrastructure by third party.
- ✓ Municipalities lead by example on public lands, for example maintenance and use of drought resistant vegetation.
- ✓ Enforce the existing regulations on noxious / prohibited weeds, especially in areas that are near watercourses; example: the Calgary Zoo apparently planted an invasive weed near the Bow River, which spreads very easily & is impacting downstream communities. This weed is “Flowering Rush” (*Butomus umbellatus*) and is an invasive aquatic plant species that resembles large sedge. It is incredibly hard to eliminate once it gets established, and the downstream communities have apparently raised this issue with the City of Calgary & the Calgary Zoo but they won’t remove this invasive plant.

2. *Lack of trust in government monitoring and assessment of risk – raised 7 times*

Management solutions

- ✓ Build trust and accountability with decision-makers.
- ✓ Include a good network for advisory panels.
- ✓ Focus on data and transparency and plain language communication.
- ✓ Ensure that the management approach encompasses all users from source to end users.
- ✓ Provide timely data collection and distribution systems – give decision-makers the tools they need – decision-support tools.
- ✓ Ensure all stakeholders are engaged at all levels of decision-making to ensure governments are held to account.
- ✓ Need appropriate funds put into monitoring branch for capacity; trust is lost by not having an independent monitoring branch.
- ✓ Work with WPACS to improve perception and build trust.
- ✓ **Transparency in decision making and planning.**
- ✓ Make decision based on good data and science.
- ✓ Meaningful public consultation.

Technical solutions

- ✓ Third party monitoring.
- ✓ Publicly accessible data and reports.
- ✓ Budget and funding for third party monitoring.

3. Lack of communication/education - raised 6 times**Management solutions**

- ✓ Require community level preparedness, especially in rural areas.
- ✓ WPACs implement AWC drought management program with municipalities in the basin.
- ✓ Start early with conservation education to both the public and industry to explain what can be done to prepare for drought. Educate the kids!
- ✓ Make grassroots groups part of drought conversations and solutions with education on how best to participate.
- ✓ Support a hub of information for all findings and create a system so people can learn about drought and solutions.
- ✓ Consider water scarcity and supply when calculating growth projections and limit growth as required.
- ✓ Create rebate programs and incentives to conserve water and keep water on the landscape.
- ✓ Provincial government to take action to implement water reuse.
- ✓ Promote in-home conservation practices.
- ✓ Immediate communication to the public about stage of drought, modeling and triggers to declaration of emergency.
- ✓ Need broad public education – perhaps lawn signs available to citizens (similar to the Save Alberta Parks signs), regarding ways to conserve water.
- ✓ Include the “why” to help encourage compliance, i.e. conserving water helps to protect fish in our rivers, protects food production that requires water, etc.

Technical solutions

- ✓ Publicly accessible third-party monitoring.
- ✓ Make non-potable aquifers available to industrial users.
- ✓ Promote low impact development and drought tolerant landscape design.
- ✓ Provincial government to address water re-use issue regarding greywater which needs legislative change.
- ✓ Restrict lawns or reduce lawns as landscaping feature.
- ✓ Use drought resistant landscape design.
- ✓ Water meters and increased consumption charges.
- ✓ Low-flush toilets, shorter showers, greywater re-use.
- ✓ Incentives for rain barrels and native grasses targeted to watersheds and geographic areas and needs.

4. Water for industry/business - raised 6 times**Management solutions**

- ✓ Close collaboration and make sure all government agencies are on the same page.
- ✓ Monitor effluent discharges during low flows to ensure downstream users have data to adjust their treatment and release requirements.
- ✓ Require that all local businesses have a drought preparedness plan.
- ✓ Act early and take the long view to understand impact of Stage 5 before we get there.
- ✓ Continue creating adaptive management because current conditions are not static –use city’s principles and approach.
- ✓ Province and municipalities to prepare prioritized behavioural changes with a list of actions and their potential impacts on industry to be monitored.
- ✓ Good science to support planning.
- ✓ Coordinate climate change adaptation systems and drought management systems as part of land use planning and approval processes.
- ✓ Implement / incentivize MUCH broader water reuse; using storm drainage just for watering vegetation in public spaces isn’t enough: reuse grey water
- ✓ Re-use water in industrial operations, such as meat processing plants.

Technical solutions

- ✓ Adjust/correct industrial order of operations.
- ✓ Prioritize industrial operations and describe what operations must be pulled back during severe drought.
- ✓ Compensation.

5. *Abruptness-people won’t change behaviours quickly – raised 6 times*

Management solutions

- ✓ Create a conservation culture.
- ✓ Instill behavioural change as soon as possible.
- ✓ Stage 5 is not the status quo- need to understand the impacts and effects in Stage 4.
- ✓ Use a system of rewards and fines.
- ✓ Target communities where water consumption is highest.

Technical solutions

- ✓ Meter water usage.
- ✓ Monitor water usage to determine high water users to educate and place limits.
- ✓ Make monitoring data available to the public.
- ✓ Provide incentives for water-saving technology, rain barrels and native grasses targeted to watersheds and geographic areas and needs.

6. *Aquifers and wetlands already depleted by gravel pits and industry- raised 6 times*

Management solutions

- ✓ Province needs to attribute greater value to the environment and ecosystem when reviewing applications for registrations.
- ✓ Province needs to enable more independent science in decision-making processes.
- ✓ Province needs to increase the burden of proof for industry development to ensure no net loss of ecological functions.
- ✓ Ensure fairness across licence requirements to address concerns for downstream users.

- ✓ Develop a response/plan for those who do not live on a main stem system or use ground water because there may be different pressures in these areas.
- ✓ Province to create more stringent processes for reviewing aggregate registrations.
- ✓ All monitoring data created by industry to be provided to downstream municipalities.
- ✓ Do not approve aggregate registration without municipal support.
- ✓ Aggregate registrations to be reviewed every five years and annually if severe or multi-year drought.

Technical solutions

- ✓ Social-ecological cost-benefit analysis vs solely economic cost-benefit analysis.
- ✓ Monitoring by third party for longer periods before approvals are granted.
- ✓ Monitoring stations on tributaries and groundwater wells for known chemicals.

7. *Lack of leadership at all government scales – raised 3 times*

Management solutions

- ✓ Province should be working in the best interest of the public – what does that mean?
- ✓ BRBC should ensure that municipal elected officials understand drought and solutions.
- ✓ Governments at all scales should build awareness of what a drought means to people because droughts are not sudden like blackouts and floods.
- ✓ Promote positive behaviours through local leadership Increase representation from industry at BRBC events as presenters.
- ✓ Ensure that policy makers attend BRBC events to learn about required change.
- ✓ Increase funding to the Land Stewardship Centre and funding for Watershed Stewardship Grants for drought communication and outreach.

Technical solutions

- ✓ All levels of government to provide publicly accessible third part monitoring data and technical reports.

8. *Fear of unknown – raised 3 times*

Management solutions

- ✓ Municipalities need to provide accurate, timely, objective information to combat misinformation and fear.
- ✓ Encourage neighbours to be understanding of each other's circumstance.
- ✓ Self-interest will be part of the cooperative agreements and these planning processes might also work outside of an emergency to conserve water.
- ✓ Recruit Watershed Stewardship groups to help with public education, need concise messaging.

Technical solutions

- ✓ Education.
- ✓ Proactive monitoring and reporting.
- ✓ Use storage as a long-term strategy, not for drought response – plan ahead.
- ✓ Automate notifications of water restrictions and early signs of drought.

9. *Risk of chaos/violence – raised 3 times*

Management solutions

- ✓ Deliberative collaboration activities in preparation.
- ✓ Promote personal responsibility to conserve water.
- ✓ Prevent water hoarding – anticipate and prepare.

Technical solutions

- ✓ Increase enforcement officers.

10. Water hoarding – raised 2 times**Management solutions**

- ✓ Education and regular updating on available supply.
- ✓ Coordination among water suppliers to limit supply to hoarders.

Technical solutions

- ✓ Enforcement.
- ✓ Implement higher costs for excessive water use, similar to higher costs for energy use during peak times.

Other concerns to certain sectors and individuals

- *Water for the vulnerable – seniors and hospitals.*
- *Parks will suffer/be closed.*
- *At the regional scale we haven't yet normalized awareness of water usage and benefits of various best practices.*
- *First Nations have priority – we get what's left under the Water Act priority system.*
- *Urban growth without water supply.*
- *Water rights are threatened.*
- *Impacts on supply for fire suppression.*
- *Impacts on wildlife/forests.*
- *Downstream flows will be interrupted.*
- *Depletion of groundwater resources by industry.*
- *Lack of communication/cooperation between water users – unclear role of WPACs.*
- *Will water shortages impact cost of living?*
- *Crop production and livestock production will be negatively impacted without compensation.*
- *Forestry operations scale and timing may affect ecosystem if drought conditions prevail.*
- *Short term strategies may be applied to the long term.*
- *Reliance on storage may create reliance and human complacency.*
- *Reactionary government response to drought instead of pre-planning.*
- *Lack of monitoring stations on tributaries and groundwater supplies.*
- *Lack of water for household management – including groundwater.*

Why are we still in a reactive response state? We have already been in a multi-year drought: we all need to be more proactive and have a robust plan that can be implemented on short notice.

Table of Concerns and Solutions

The Table lists the raw feedback from discussion tables at the workshop. The numbers beside each entry in the Table indicate how often the same or a similar issue was raised in the workshop feedback reports. **Note:** No number appears if the concern was already accounted for under a broad topic heading, for example, the identified concerns about the aquatic ecosystem ((or components of the aquatic ecosystem affected by low flows during drought conditions) were included under the broad topic: *Instream flow risks to the aquatic ecosystem.*

In the Table, concerns raised by participants are recorded in the light brown column, and the suggested solutions are recorded in light green.

Concerns	Management Solutions	Technical Solutions
Instream flow risks to ecosystem 10	<ul style="list-style-type: none"> ✓ Implement ‘Nature based solutions’ including protection of natural areas as well as green urban infrastructure. ✓ Increase funding and support to Land Trusts, especially the ones that focus on protecting the smaller areas, including hydrologically sensitive areas. ✓ Provide financial incentives to municipalities to create more Conservation Easements. ✓ Catchment-wide planning on dry prairies. Economic decisions limited by water supplies and impacts of withdrawals on ecosystem. ✓ Good science to support planning. ✓ Enforcement of laws to protect aquatic ecosystem. ✓ Restoration of wetlands and riparian areas. ✓ Switching to agricultural crops that use less water. ✓ Promoting industries that have lower demands for water. ✓ Monitor & enforce existing IOs. ✓ Water usage prioritized by need / use. ✓ Ensure Watershed Resiliency & Restoration Program grant funds remain available (& are even expanded in amounts available) to Watershed Stewardship groups, as this program is needed & provides a massive return on investment; a huge “bang for your buck”. ✓ The Province should require the release of some of the water stored upstream in reservoirs, when they are holding back 	<ul style="list-style-type: none"> ✓ Municipalities lead by example on public lands, for example maintenance and use of drought resistant vegetation. ✓ Cover irrigation canals with solar panels. ✓ Enforce the existing regulations on noxious / prohibited weeds, especially in areas that are near watercourses; example: the Calgary Zoo apparently planted an invasive weed near the Bow River, which spreads very easily & is impacting downstream communities. This weed is “Flowering Rush” (<i>Butomus umbellatus</i>) and is an invasive aquatic plant species that resembles large sedge. It is incredibly hard to eliminate once it gets established, and the downstream communities have apparently raised this issue with the City of Calgary & the Calgary Zoo but they won’t remove this invasive plant.

	quite a bit & the downstream flow is drastically reduced	
Hospitals and senior's homes/ vulnerable populations 1	Community level preparedness and response plans must be put in place to prioritize needs during a drought.	
Water hoarding 2	<ul style="list-style-type: none"> ✓ Municipalities need to provide accurate, timely, objective information to combat misinformation and fear. ✓ Coordinate with water suppliers to limit hoarders 	Implement higher costs for excessive water use, similar to higher costs for energy use during peak times.
Risk of chaos 3	Education.	
Abruptness – people don't change their behaviours quickly 6	<ul style="list-style-type: none"> ✓ Instil behavioural change as soon as possible ✓ Use a system of rewards and fines ✓ Target communities where water consumption is highest ✓ Why are we still in a reactive response state? We have already been in a multi-year drought, we need to be more proactive & have a robust plan that can be implemented on short notice. 	
Lack of communication 6	<ul style="list-style-type: none"> ✓ Create an education and outreach program early. ✓ Need broad public education – perhaps lawn signs available to citizens (similar to the Save Alberta Parks signs), regarding ways to conserve water. ✓ Include the “why” to help encourage compliance, i.e. conserving water helps to protect fish in our rivers, protects food production that requires water, etc. 	Place ads on roadsides/ radio/TV/social media/ mobile phone game sites to spread the word.
Water for business 6	<ul style="list-style-type: none"> ✓ Require that businesses develop drought preparedness plans ✓ Implement / incentivize MUCH broader water reuse; using stormwater just for watering vegetation in public spaces isn't enough: reuse grey water ✓ Re-use water in industrial operations, such as meat processing plants. 	Compensation
Water rights are threatened 1		
Ecological collapse and fish mortality – long term effects	Tourism may need to be curtailed in certain areas or practices, for example, no more travel on glaciers	

Industry not having access to sufficient supplies	Act early and take the long view to understand impact of Stage 5 before we get there	
Urban growth without sufficient water for build-out 1	<ul style="list-style-type: none"> ✓ Require community level preparedness ✓ Create educational programs. 	Restrict lawns or reduce lawns as landscaping feature- promote drought resistant landscape design
First Nations have sovereignty and resource rights on their land so water scarcity will increase elsewhere 1	Close collaboration and make sure all government agencies are on the same page	<ul style="list-style-type: none"> ✓ Meter water usage ✓ Monitor water usage to determine high water users to educate and place limits
Biodiversity will suffer	<ul style="list-style-type: none"> ✓ Stage 5 is not the status quo- people need to understand the impacts and effects in Stage 4. ✓ Educate the kids! ✓ Create a conservation culture. 	
Parks will suffer 1	<ul style="list-style-type: none"> ✓ Program for the future ✓ Normalize and prepare for what the systems will look like during Stage 5 or multi-year drought. 	
Greed, ignorance and competition leading to violence and chaos	<ul style="list-style-type: none"> ✓ Need more enforcement of water restrictions. ✓ More education and public awareness ✓ Demonstrate positive actions and examples of collaboration 	
Conflict	<ul style="list-style-type: none"> ✓ Deliberative collaboration activities in preparation ✓ Promote personal responsibility to conserve water ✓ Prevent water hoarding – anticipate and prepare 	
People will resist change	<ul style="list-style-type: none"> ✓ Promote in-home water conservation practices 	<ul style="list-style-type: none"> ✓ Water meters and consumption charges ✓ Low-flush toilets, shorter showers, water re-use ✓ Incentives for rain barrels and native grasses targeted to watersheds and geographic areas and needs. 1 ✓ Restrict lawns as landscaping feature
Lack of leadership by mayors and councils and Province 3	<ul style="list-style-type: none"> ✓ BRBC should ensure that municipal elected officials understand drought and solutions ✓ Build awareness of what a drought means to people because droughts are not sudden like blackouts and floods 	

	<ul style="list-style-type: none"> ✓ Promote positive behaviours through local leadership 	
Gravel pits – already there are impacts on aquifers, wetlands and wildlife 6	<ul style="list-style-type: none"> ✓ Province needs to attribute greater value to the environment and ecosystem when reviewing applications for registrations. ✓ Province needs to enable more independent science in decision-making processes. ✓ Province needs to increase the burden of proof for industry development to ensure no net loss of ecological functions. ✓ Province to create more stringent processes for reviewing aggregate registrations. ✓ All monitoring data created by industry to be provided to downstream municipalities. ✓ Do not approve aggregate registration without municipal support. 	Social-ecological cost benefit and analysis vs solely economic cost-benefit analysis
Fear of the unknown – what are the risks/ effects for people who have never experienced severe drought or water scarcity	<ul style="list-style-type: none"> ✓ Education ✓ Recruit Watershed Stewardship groups to help with public education, need concise messaging. 	
Water, wetlands preservation 1	Preserve natural infrastructure	
Lack of communication /co-operation between water users – role of WPACs 1	<ul style="list-style-type: none"> ✓ Increase representation from industry at BRBC events as presenters. ✓ Ensure that policy makers attend BRBC events to learn about required change. 	
Lack of knowledge and awareness by the public; will public engage and accept restrictions?	<ul style="list-style-type: none"> ✓ Start early with conservation education to both the public and industry explain what can be done to prepare for drought ✓ Make grassroots groups part of drought conversations and solutions with education on how best to participate 	
Will water shortages impact cost of living? 1		
Education buy-in: need to reiterate message of resilience and the impacts of what we do	<ul style="list-style-type: none"> ✓ Continue creating adaptive management because current conditions are not static – base management on the city’s principles and approach ✓ Province and municipalities to prepare prioritized behavioural changes with a list 	

	of actions and their potential impacts to be monitored	
At the regional scale we haven't yet normalized awareness of water usage and benefits of various best practices	<ul style="list-style-type: none"> ✓Coordinate climate change adaptation systems and drought management systems as part of land use planning ✓Consider water scarcity and supply when calculating growth projections and limit growth as required ✓Create rebate programs and incentives to conserve water and keep water on the landscape ✓Provincial government to take action to implement water reuse 	<ul style="list-style-type: none"> ✓Make non-potable aquifers available to industrial users ✓Promote low impact development and drought tolerant landscape design ✓Provincial government to address water re-use issue regarding greywater which needs legislative change
Lack of understanding of system resilience from water, energy, natural environment, food, economy nexus	Ensure Watershed Resiliency & Restoration Program grant funds remain available (& are even expanded in amounts available) to Watershed Stewardship groups, as this program is needed & provides a massive return on investment; a huge "bang for your buck".	Research
Lack of trust in government decision-making processes 3	<ul style="list-style-type: none"> ✓Build trust and accountability with decision-makers. ✓Include a good network for advisory panels. ✓Focus on data and transparency and plain language communication. ✓Ensure that the management approach encompasses all users from source to end users. ✓Provide timely data collection and distribution systems – give decision-makers the tools they need – decision-support tools. 	Correct order of operations in times of need
Lack of trust in government decision making processes	Support a hub of information for all findings and create a system so people can learn about drought and solutions.	
Lack of trust in government decision making	Ensure all stakeholders are engaged at all levels of decision-making to ensure governments are held to account.	
Depletion of groundwater resources by industry	Ensure fairness across licence requirements to address concerns for downstream users.	
Impact on the environment/fisheries	Require users to maintain ecological integrity	
E Coli concentrations in low flow conditions		Monitor effluent quality and report to downstream municipalities

Impacts on wildlife 1		
Impacts on value added industry and the economy		
Impact on business		
Crop production/livestock production 1		
Lack of trust in government monitoring and review	<ul style="list-style-type: none"> ✓ Province has downloaded the responsibility for monitoring to industry – so there is less trust. ✓ Need appropriate funds put into monitoring branch for capacity; trust is lost by not having an independent monitoring branch. ✓ Work with WPACS to improve perception and build trust. 	<ul style="list-style-type: none"> ✓ Third party monitoring ✓ Provide budget for public employee to do monitoring/review
Government may make decisions without having all the relevant information or recent information/ not relying on the experts	<ul style="list-style-type: none"> ✓ Change water supply management policies/update policies ✓ Make data available to the public 	
Unknown effects from on-farm water restrictions or water loss that affect other business and communities at large	Proactive monitoring and replacement of depleted supplies	
Ghost Watershed – environmental impact; threatened species; concerned that environment becomes a backburner concern after human impacts	Use the wording in the SSRP – province should be following their own plan	
Not managing the eastern flows – forestry scale and timing ; 1 wetlands that feed into Waiparus Creek – in only 11 years, have had 2,000 ha		

<p>logged, used to be an adjacency requirement but it is no longer required; so large logged area without time for regrowth – what are the impacts on the surface water in tributaries 1</p>		
<p>Creeks going dry; hearing about wells not producing; not keeping up with the usual demand; having to haul water for personal use;</p>		
<p>Coal Creek/Grand Valley Creek – creek runs dry when water is taken off the storage reservoir and so downstream flow are interrupted; 1</p>		
<p>Council/Govt – water table will drop and impacts on wells; fire truck takes all the water from the cistern but water supply is restricted or limited outside of their control could have impact on fire response supply 1</p>		
<p>Burnco gravel pit expansion upstream of Cochrane; approved to mine in the water table and to wash gravel; lack of trust and transparency in the approval process; public consultation process was only 7</p>	<ul style="list-style-type: none"> ✓ Province should be working in the best interest of the public – what does that mean? ✓ Require more meaningful public consultation processes during approval processes. ✓ MD’s need to develop community drought preparedness and response plans. 	

<p>days – not enough time; Burnco wants to dewater and gravel-washing operations; what about nearby wells and contamination of the well and releases to the nearby Bow River; Rocky View approved 160 ac; EAPA gave approval for water disturbance without understanding the impacts on the groundwater availability and quality. 1</p>	<p>✓ Aggregate registrations to be reviewed every five years and annually if severe or multi-year drought.</p>	
<p>How will IO and WCO be handled, monitored and studied during the drought.</p>		
<p>Short term strategies may be applied to the long term. 1</p>	<p>Request to increase funding to the Land Stewardship Centre, Watershed Stewardship Grants for drought education and outreach.</p>	
<p>Fear over reactionary criticisms.</p>	<p>✓ Encourage neighbours to be understanding of each other’s circumstance. ✓ Self-interest will be part of the cooperative agreements and these planning processes might also work outside of an emergency to conserve water.</p>	
<p>Reliance on storage may create reliance and human complacency. 1</p>	<p>Use storage as a long-term strategy, not for drought response.</p>	
<p>Lack of monitoring stations on tributaries and groundwater. 1</p>	<p>Automate notification of water restrictions before crisis.</p>	<p>Evaluate cost-benefit of natural infrastructure</p>
<p>Government is reactionary rather than planning. 1</p>	<p>Communication about drought, modeling and triggers to declaration of emergency,</p>	

<p>Lack of water for household management. 1</p>	<ul style="list-style-type: none"> ✓ For more rural subdivision developments where wells are drilled into the aquifer, should require a MUCH higher threshold for proving the water supply is sufficient for the additional draw (we heard from acreage owners whose neighbours sub-divided their properties & each new home on that sub-divided property drilled their own well, resulting in loss of water access for the original acreage owners, requiring them to drill a new & much deeper well at their own cost of tens of thousands of dollars); there are only so many straws that can be put into the aquifer before it's unsustainable. ✓ Need rural municipalities to be more thoughtful re what is a sustainable & reasonable amount of density for the available water. 	<ul style="list-style-type: none"> ✓ Monitoring of tributaries and groundwater wells. ✓ Academics & Researchers help advocate with existing well users for what additional draws can be made on aquifers to be sustainable.
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