Water Policy Session Proceedings

PNWER Annual Summit – Whistler, British Columbia

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**Co-Chair** Jim Honeyford, Washington State Senator

**Co-Chair** David Hill, University of Lethbridge

**Speakers**

***Water Management – Issues, Challenges and Opportunities in the 21st Century***

Jim Honeyford – Washington State Senator

Arnie Roblan – Oregon State Senator

Kathy Williams – Montana State Representative

Lynn Kriwoken – BC Ministry of Environment Executive Director

Andy Ridge – AB Environment and Sustainable Resource Development, Water Policy Branch, Executive Director

Larry Doke – SK Member of the Legislative Assembly

Heather Jirousek – Government of Yukon, Water Resources Branch, Program Advisor

***Introducing B.C.’s New Water Sustainability Act***

Lynn Kriwoken, Executive Director, BC Ministry of Environment

**Opening Remarks – David Hill**

The intention for this session is to share information and experience in member jurisdictions regarding key water issues faced now and expected in the future. Desired panel outcomes are best practices, new approaches, and opportunities to improve solutions. The session today will also share the approach in BC for water sustainability.

**Water Management – Issues, Challenges and Opportunities in the 21st Century**

Key questions for each state and province:

1. What is the breadth of your jurisdiction’s water management mandate (e.g. programs, goals, and outcomes).
2. What are the top three water management issues and challenges that your jurisdiction faces now and in the future?
3. How is your jurisdiction responding to these issues and challenges? What role can PNWER play to help tackle these challenges?

***Jim Honeyford – Washington***

The two agencies managing water in WA are Department of Ecology (set water standards and issue water rights) and Department of Health (administers drinking water).

Main issues in WA:

1. Storm water in cities
2. Flood control
3. Water supply (related to droughts)

Past legislation:

Yakima Basin Integrated Plan was the outcome of collaboration between environmentalists, tribes, and local governments to come up with a 50-year solution to water supply in the Yakima Basin. Snow pack is an additional reservoir. Legislation involved plans for water supply: two lakes with a pipeline between to equalize the water levels in the lakes and store more water, and establish two other lakes as reservoirs, expansion of another reservoir, and an off-storage site.

The plan also required the purchase of 30,000 acres of land for habitat conservation ($130 million project, $100 million to purchase the land). Since there was a concern that the environmental community would leave, a condition was included in the purchase agreement that the Department of Ecology would have to provide additional water-feet by 2025, otherwise the land would revert to the School Trust Fund, and then the Department of Ecology could sell the land and contribute the money to the School Trust Fund. This condition is also put into an easement so the legislature can’t change it.

Additionally, Bill 65-60 was put forward in 2014 to set up a task force to deal with storm water, flood control, and water supply. Unfortunately the Bill died (Legislature is 23 Republicans and two Democrats). However, Legislature is working together to address the three main issues in WA, and estimate the costs to be $3-6 billion (currently seeking revenue sources).

***Arnie Roblan – Oregon***

Mr. Roblan was appointed by mayor to serve on Water Board in a community – where he learned that people can become very passionate about water use: “whiskey’s for drinking and water’s for fighting”. This community around a lake sued another group taking water out of the stream leaving the lake (despite the group having rights to that water, which, having left the lake, was on its way to the ocean). The litigation went on for eight years. An environmental group came in and said, “you have five years to protect your water rights. It has been eight years and you haven’t protected it.” The judge agreed, and the group lost water rights.

This incident motivated Arnie Roblan to join the legislature. One of the first bills he put introduced and passed was to allow cities have water rights that are not perfected if they don’t need it.

The Legislature is in charge of water policy. In OR, government bodies have a citizen commission that makes the day-to-day decisions about water (commission appointed by governor).

Many different water issues in OR:

* Tribes in Oregon have water rights in perpetuity
* Working with federal government to remove dams on the Klamath River
* First statewide integrated water strategy was completed in 2012. The discussion includes Fish & Wildlife and Agriculture.

Water Issues:

1. Water storage
* Assumed aquifer on east side and water from Cascades would provide all water needed, but this is proving not to be the case due to climate change and forest plantings of juniper (absorbs water before it gets to the aquifer). Additionally, predictions made about water movements when in an aquifer are often wrong – water goes where you didn’t expect it to go. Need to think about how to recharge the aquifers.
* In discussions with Canada to consider buying water via the Columbia River (building a storage structure and sending water down when needed), but unclear who actually has rights to the water travelling from BC through WA to OR.
1. Balance the needs between in- and out-of-stream uses of water
* A person’s water right may or may not be saleable when they sell their property along a stream.
* In a situation of scarcity, First In First Out tends to apply and the person at the end of the stream loses. Need to think about how to protect people’s water rights and share the resources.
* Funding is always an issue: none of the infrastructure projects to store water comes cheaply. Any infrastructure project requires years of permitting.
1. Flood control
* PNWER is an integrative region – flood control in OR and WA is determined in Canada via the Columbia River.
* We are totally dependent on each other for water supply and water control. For example, part of the Columbia River system is fed by lakes in Montana. The interdependence of the region is becoming more and more apparent, not just with water, but also with other resources such as natural gas.
* Region needs to work together to meet the needs of citizens in our respective areas in a win-win solution.
* Dams have been removed on the Elkhorn River, changing the whole area through sediment deposits and changes to fish activity.

We all have a lot to learn from each other as we gather information in our respective regions.

***Kathleen Williams – Montana (District of Bozeman)***

Two agencies in Montana: Water Quality and Water Quantity

* Applications, state-wide communications, assessments
* State water planning is underway
* Discharge permits
* Natural resource damage program
* Water quality standards
* Leadership of Montana Watershed Council (local solutions for watershed challenges)
* Fish & Wildlife Agency manages public in-stream rights for fish.
* Department of Agriculture has groundwater monitoring program related to pesticides.

Water Issues:

1. Continuing a cooperative dialogue in the midst of increasing competition for water and a changing climate. In Montana, working hard to settle the last tribal and federal reserve water rights settlements (have been extremely successful in settlements thus far).
2. Staying true to prior appropriation doctrine while adapting it to meet current and future needs. How do we share water during shortages? In Bozeman, rely on flowing streams as a significant economic driver, and those streams wouldn’t be flowing if the hydro dams in Grand Falls weren’t in place (which are being transferred to Montana Utility).
3. Making state water planning meaningful. All states are trying to figure out how to project, but not over-project, be creative, but also protect your resources.

PNWER needs to:

* Continue the conversation with open communication.
* Learn more about jurisdiction water issues and inter-jurisdictional water issues.
* Encourage fertile markets for new water technologies and conservation. Energy processes, water re-use. Many new technologies arising around fracking and other uses related to water, such as dual water systems developed for grey water and wastewater. Low energy desalination needs further technological understanding.
* Increasing the breadth of the relationship between policy makers and research institutions. Research Institutes Network in the US is one group to coordinate with.

***Norm Semanko – Idaho Water Users Association***

Idaho Water Users’ Association is an NGO representing water users, agriculture, and irrigation systems. States have deference over water management; the Water Resource Board in Idaho is constitutionally mandated. Water districts in Idaho are responsible for the distribution of water rights even in times of shortage. Department of Environmental Quality has moved up recently to a full cabinet level. Legislature is a major player in water issues. Idaho Legislature cares deeply about water issues and directs when needed, but doesn’t micromanage.

Water Issues in Idaho:

1. Water Adjudication – Idaho began the allocation of the Snake River basin in 1987. A few thousand water rights have been distributed and reaching the conclusion of water rights allocation, including negotiation of water rights with the tribes, to protect downstream species like salmon (agreement has been in place for 10 years).
2. Water Supply – Injunctive management: First in Time, First in Right is part of the constitution. This system provides certainty, but causes pain in times of shortage, but it is clear on rights. People who want to continue to divert water (the juniors) need to work with people upstream (the seniors) to manage supply.
3. Water Storage – there are many issues around who gets to fill their storage rights when. Currently before the Supreme Court.
4. Water Quality – time for Idaho Department of Quality to take over the permit program.

Solutions:

* Water supply: Legislature appropriated $50 million for water development projects (surface storage and recharge).
* Water storage: Refurbishment of capital complete (using cigarette taxes). $5 million per year can be diverted for water storage solutions: capable of storing 6 million cubic feet while 37 million cubic feet leaves Idaho each year.
* Water quality: water for the US issue, who’s taking water modernization act, irrigation, water quality are all important issues.

Role of PNWER: opportunity to share information, learn from others, and take new ideas home.

***Jim Ogsbury – Western Governors’ Association***

Work for 19 (very) independent governors each with his or her own water jurisdiction to manage (19 western-most states). WGA is a fiercely bi-partisan organization, mostly involved in collaborative policy development and advocacy.

Water is the most unifying issue for this association. The 100th meridian was defined as the line where the climate becomes arid – precipitation averages less than 20 inches per year (Seattle gets 40 inches per year). Western water needs are different and one-size management does not fit all. Each state is best equipped to manage its own water needs.

Two recent resolutions reflect these issues:

1. Assertion of State Authority resolution for allocating, administering, protecting, and developing water resources. Extreme weather and fire events pose additional stress on water supplies. Water is an imperative resource to support additional growth and development. Need to prioritize responsible stewardship.
2. Governor’s policy resolution has led to federal recognition of the authority that states have over water management. States have on-the-ground expertise around water that Washington, DC cannot have.

Other factors:

* Clean Water Act – governors have varying opinions about the substance of the act, but are unified in their concerns about process for water management. Convener pledged that those concerns would carry great weight. States have exclusive authority to manage groundwater.
* Drought – a major concern throughout western US. California is in midst of most severe droughts in history – never been more singularly focused on an issue than they are on water. Currently, 12 of the 19 states are experiencing severe drought. WGA Chairman, Brian Sandwell of Nevada, has announced his singular initiative is the creation of a Western Governors’ Drought Forum to generate a regionalize dialogue on drought management and mitigation. Forum will include state officials, industry reps, agricultural producers, and many others, to consider different aspects of drought management and mitigation: energy production, manufacturing, agriculture, etc. Create an online best practices library for drought management, including best-in-class local management policies, and collection of state drought plans and case studies.

Role of PNWER:

1. Add your voice to continuing and unrelenting call for state authority to manage water resources.
2. Participate in and support Western States Drought Forum.

***Lynn Kriwoken – BC Ministry of Environment***

Explained the water we’re drinking today comes from 21 Mile Creek out of Rainbow Lake.

Scope of BC Water Mandate spans several programs and agencies importance of water for environment, economy, community, public health and safety. Responsibility rests with Ministry of Environment (standards) and Lands and Forests & Natural Resources Operations (permitting, dam safety, drought management, groundwater regulation, protection and compliance). Both have protection of water across borders. A number of other agencies (Ministry of Agriculture, BC Hydro, etc.) are involved in different aspects of water management.

Top issues:

1. Climate change means water change. Hydrology is all about uncertainty. Our historical trends are not reliable. Seeing warmer, wetter winters and hotter dryer summers (forest fires).
2. Investment decisions consider water – higher risk to water means higher risk to investment and increased uncertainty (especially in resources development – forestry, mining, water power).
3. Food – water is needed for agriculture use and subject to restrictions and competing demand.
4. Pacific salmon – salmon is an icon in the region, can be thought of a canary in the coalmine, and scientists predict salmon will continue to be impacted by climate change.
5. Population growth and urban development – BC expected to grow by 1.4 million over the next 25 years, which will impact to how we develop our land (run-off, green space, flood risk, watershed).
6. Knowledge – having the science and information to manage our water sustainably: climate, culture changes, land use, quality, etc.

Province is responding to these challenges (not time to cover all):

* BC’s new water sustainability act is a historic moment where we’ve modernized a 100-year old act.
* Working across natural resource sector to integrate policies, legislation, and decisions making to streamline policies and permits. One land, one response approach.
* Science and information: government is partnering with universities around climate change and impacts, sea level rise and flood risks (two recent studies on Fraser River flood risk for flood proofing along river)
* Oil & Gas Commission requires quarterly reporting on water use by that sector, information is compiled on Commission’s website.
* Provinces and territories have developed a portal called Water Info Stream to share info
* Community development: provided drought planning guidebooks after 2009 drought,
* A number of interesting tools for community development: water balance model helps community development; calculator for water conservation can result in both water and cost savings.
* Farm resource management and support for water
* Water re-use: City of Dawson and Shell Canada opened a new municipal wastewater treatment plant to treat water to a standard for use in industrial capacity.
* Year-long planning process in Elk Valley managed by Teck Resources to address water quality and quantity issues in the area.
* Education: public is a key driver in any change – opinion polls show that BC people care as much about water as they do hockey (95% people polled believe fresh water is essential to health and well-being).
* Living Water Smart Plan: regulatory and stewardship front, tapping into interests of BC people and encourage importance of water to our lives. Everyone needs to take part – bottom-up and top-down approach.

What can PNWER do?

1. What is the cost, the value of water to our economies in this region?
2. Keep the conversation going, especially face-to-face.
3. Talk about trans-boundary water issues particularly related to cumulative effects.

***Andy Ridge, AB***

Mandate, focus areas, and collaboration:

* Government strategy: Water for Life – showing how ministries work together. Water is managed by the Crown on behalf of the people. Over half of GDP is generated with support from water in AB.
* Land-Use Framework: planning paradigm based on watersheds and economic and social parameters
* Integrated Resource Management System: large focus in AB government to drive responsible development and provide assurances and accountability for water management. Appointed a single regulator for all resource oil & gas sector, including water act applications and licensing allocations. Independent monitoring agency to manage significant data to reconfigure how AB delivers business.
* Regional-based Planning: considering the sum-total of development activities. Formal planning process with a 50-year planning horizon for water and other activities. Plan in place for Lower Athabasca and also Southern AB and working on other areas.
* Developing management frameworks to have forward-looking parameters for development decisions around water access and diversion, dependent on time of year and other needs. Promoting collaboration and system management with industry, government, and municipalities.
* IRMS Overlay: regional plan that includes air, water, and other factors.

Focus Areas:

1. Responsive: flood mitigation, invasive species
2. On-going: Lower Athabasca Water Management Framework Phase 2, wetlands
3. Proactive: Tougher conversations about water that government had with AB people: Hydraulic fracturing, healthy lakes, water management (integrated management of use), sustainable water drinking systems.

Alberta Water Nexus:

Healthy Ecosystems: need to optimize water use to make sure maximize opportunities for growth until we hit the point of prioritizing some uses over others.

Travelled around AB to talk to people about water use priorities:

* Water conservation policy for oil & gas (water use hierarchy and effects)
* Water bank pilot (manage water use in place and time)
* Lake management framework (vision, clarity of responsibilities)
* Sustainable drinking water systems (regional governance models to support full cost accounting, considered from a geographic, watershed perspective)

Opportunities for collaboration:

* Literacy: information portals, food / energy / community water nexus.
* Best management practices:
	+ Conservation, efficiency, productivity (fracking and municipalities’ water re-use)
	+ Offsets (wetlands)
* Research agenda: integrated watershed management, adaptation and water management.
* Want to discuss and consider what is going on in other jurisdictions that have similar water use issues.

***Larry Doke, MLA SK***

In October 2012, Premier Bradwell released plan for growth. A 25-year Water Security Plan was developed to protect and enhance water quality while allowing for growth in SK. Implementation of 25-year plan and all aspects of water management brought together in Water Security Plan. Goal is to reduce flood and drought damage, and protect water quality.

Key issues in SK:

* Water security to ensure growth in SK – adequate supplies of water, but not always where and when needed (e.g. potash development and irrigation needs). Need to upgrade water supply channel to provide water for industries and farms.
* Flooding – recovering from flood on eastern side of province (high rain and snow falls). Emergency flood damage reduction program supports people suffering from floods and prevents new floods by preventing new development in areas likely to flood (not building in flood plains prevents millions in damage). In SK, series of dams and flood control structures help manage water.
* Drainage – online drainage forum with agricultural stakeholders to converse about issues.

SK is dedicated to conversing and collaborating with other provinces and states to learn and share knowledge.

***Heather Jirousek, Yukon***

Yukon Water Management Mandate includes seven departments responsible for drinking water to highway water management. Responsibilities include:

* Monitoring quality and quantity for aquatic ecosystems
* Flood forecasting
* Inspections of water licenses
* Policy and information management for water

Yukon Water Strategy developed with First Nations and municipal governments to identify issues and challenges:

* Groundwater
* Climate change (ice breakup at Dawson has advanced 5 days in 100 years)
* Increase data collection to support decision-making
* Recently released water strategy and action plan: ways to improve
* Groundwater understanding and management and developing regulatory framework
* Maintaining access to drinking water
* Improving collaboration through annual water forum for issues of concern
* Improving information sharing (Yukon water website, water data catalogue)
* Action on climate change to plan for water needs now and in future, expand water monitoring networks
* Advance research needs

PNWER is a good place to further the conversation, especially around trans-border issues such as conservation, management, and harvesting of salmon.

* Example: YT hydrologist working with AK around ice pack research
* Example: Canadian Council for Minister of Environment working together on groundwater security.

***Questions:***

How can citizens be engaged in water management?

*Response*: water is an emotional issue for many people. Want to engage with as many people as possible.

* Montana has made effort in trying to form and strengthen local watershed groups. Volunteer water quality monitoring. E.g. Blackfoot drought response plan where people work together to overcome shortages.
* Yukon is working to be flexible and responsive to community needs, stimulating dialogue and encouraging people to take part (offer food).
* Shared issues in a region can be a prompt to get people together to have conversations, raise awareness, and solve challenges about water use and storage. Use opportunities that present themselves to collaborate instead of fight.

Traditionally, we have undervalued water because we don’t connect its value with its cost. What are people doing about that?

*Response*: Long tradition in constitution that once water is committed to land for agriculture or for drinking that it can never be denied. Concern about cost of water being prohibitive. Can’t price water to point we can’t afford to farm.

* In BC, currently don’t regulate groundwater, so companies like Nestle can take groundwater for bottling for free. General outrage from public.
* In OR, grey water and waste water management costs more than bringing drinking water into houses.
* Charging more for water tends to work in municipalities (metering encourages conservation). The rise of water markets in US and ability of some people to outbid others for water. In CO, “buy and dry” means some people are buying up water and others can’t get access to it.

Might be time to revisit the topic of water markets, particularly Canada / US.

Water jurisdiction in US?

*Response*: resolutions-based organization (Western Governors’ Alliance). Goal is to engage governors in leadership role around water and build consensus to get things done. Very firm on state authority for water quality and quantity. All governors are concerned about process for water management. Working to develop a new paradigm for water that isn’t paternalistic and is more focused on collaborative decision-making.

Interpretation of the extent of the Clean Water Act – much discussion on how far does the federal jurisdiction extend. Before we start taking positions, let’s really understand the proposal and what it would mean for jurisdiction change. Have to look carefully at the words of the rule and leave the politics behind. Need to overcome the disconnect between the words the EPA is saying and the rules written in the act (e.g. are ditches and canals actually part of US waterways?).

**BC’s New Water Sustainability Act – Lynn Kriwoken**

New Water Sustainability Act will replace Water Act established in 1909.

***BC Context***

* Subject to three hydrogeological systems: Coast – rain; Interior – rain and snow; North – snow.
* Land ownership – 93% is crown land
* Five modern treaties and 61 nations in the treaty process (all including water)
* Less than 5 people / sq. km with a total of 4.5 million people
* Surface water allocation by volume: refer to slideshow for graph and statistics, but 98% of water in BC is used to generate power, while conservation and land improvement (non-consumptive use) is 58% of the remaining 2%.
* Clean and abundant water is essential, but water is under pressure
* Many areas in BC are flow sensitive at some point in the year
* Many areas have restrictions or shortages due to competing demands

Legislative framework:

* Work with federal government and provinces on water issues
* Many different statutes impact water in BC – federal, provincial and local.
* Align Act to other statutes so they are complementary and work together

***Engagement***

In BC, tried to reinvent how public engagement is done. Process launched in 2009:

* Traditional methods + social media
* Written submissions
* Blog / website for policy

Stakeholder groups include:

* Citizens and First Nations
* NGO
* Local government
* Partnerships
* Professionals
* Academia
* Agriculture
* Business Industry

***New Act***

Move from Water Act to Water Sustainability Act (will be brought into force by legislation). Built in groundwater regulation for the first time as well as more flexible regulating for scarcity and new environmental flow requirements. Additionally, there are area-based regulations to address diversity and new governance arrangements and planning tools.

Key features of new Water Sustainability Act:

1. Protect Stream Health and Aquatic Environments: flow needs are vital (temporary restrictions on licenses to protect flow needs), prohibitions on dumping into streams and aquifers.
2. Consider Water in Land Use Decisions: consider water objectives in resource and land use decisions (crown or private land, streams and aquifers areas; develop water sustainability plans (public process and ministerial order, restrictions on land/resource use, changes to water rights).
3. Regulate and Protect Groundwater Use: reflects a shift in societal values around groundwater. Groundwater and surface water are managed as a single resource. Domestic users are excluded (want to keep it simple and focus on where water use really matters). Will improve understanding of aquifers, most users will be licensed with fees and annual rentals. The date of first use will guide priority date for groundwater users.
4. Regulate Water Use During Scarcity: all users can be regulated during scarcity, retain “first in time first in right” (FITFIR) with exceptions, ensure water supply for essential human and livestock needs, allow temporary restrictions to protect critical environmental flows.
5. Improve Security, Water Use Efficiency, and Conservation: Expand beneficial use definition to include conservation targets; audits can be carried out, water licenses can be reviewed every 30 years (terms and conditions still valid as conditions change); area-based regulation for specific regions (e.g. license small ground water users, measure and report, restrict well drilling); enable creation of agricultural water reserves.
6. Measure and Report Use: require large-volume users to measure, record, and report water use. Smaller-volume users to measure in specific circumstances under these regulations.
7. Enable a Range of Governance Approaches: engagement resulted in perspectives across the board whether local or provincial authority – no clear consensus. Increase flexibility in governance arrangements to better suit local needs, allow for delegation of some activities or decisions to agencies outside of government, support creation of advisory group, apply clear and consistent provincial framework.
8. First Nations: 203 First Nations in province, 30 tribal language groupings with constitutionally protected rights. Have unique cultural, spiritual, and economic interests in water. Desire to manage water resources, including planning and decision-making.

Water Fees and Rentals were considered as part of the review. Currently two types of fees are charged: annual application fee and ongoing rental fee (ranges from 1 cent to $1.10 per 1,000 cubic metres (low cost)). Different costs across different water use purposes. A fee review is underway; cost recovery is part of the mix, especially considering groundwater.

***Lessons Learned***

* Engage early and engage often – listen to understand – don’t stand at the front of the room to defend a position.
* Build trust one conversation at a time and nurture a relationship.
* Believe that policy will be stronger as a result of this engagement.
* Take the time to get it right, not just get it done.
* Manage expectations (continues to be critical)
* Keep eye on the prize – despite political changes, need to keep focused on desired result.

***PNWER Shared Policy Interests***

* Value of water to economy
* Allocation and regulation
* Groundwater
* Water pricing (how much and if we price water)
* Transboundary
* Engagement
* Education and outreach

For more information: http://engage.gov.bc.ca/watersustainabilityact

***Questions***

How do you handle interest groups flooding with questions?

*Response*: We take the questions and lay the page blank to seek input and be open to new themes emerging. When reporting back to people, be open about how information was or was not included in the Act and why.

How much of the water of BC does this act apply to?

*Response*: All the fresh water in the province.

How do First Nations’ unresolved claims impact Act?

*Response*: Unknown at this point.

How many places do you license?

*Response*: Throughout the province. Water power makes up 98% of the province, the other two percent is everything else.

What venue is there to start to resolve First Nations issues around water?

*Response*: In terms of new policy and legislation, we’ve worked with First Nations Leadership Council, but they don’t represent all 203 First Nations in BC. We did regional meetings to capture more. Developing MOU with First Nations Leadership Council around First Nations’ water use. There are a number of forums for the conversation, some formally established and some not.

Challenge in AB for water use is way licenses are written that doesn’t indicate return. Did that come up in BC?

*Response*: Generally no.

Comment: Thanks for preparing a model other jurisdictions can use.

What impacts on US wanting to buy BC water?

*Response*: Legal barriers and emotional public around water export. Legal act bans bulk removal of water from province. Legislation is updated and amended all the time according to changing needs, but if the question came up there would be some legal barriers.

**Action Items**

How do we fund these new water policy initiatives?

Make sure PNWER can be a forum: develop tools, continue the dialogue, and develop change.

FITFIR – how can we use that platform to move forward?

PNWER region is likely a fertile ground for new technology for water treatment, re-use, conservation, and storage. From an economic point of view, PNWER could be a significant driver in the region. Policy makers need to draw in some of the research taking place in our universities to inform policy decisions.

Drought planning and drought exercises: these connect to the other issue of what state authority exists. If people aren’t in agreement, what policy levers exist to move forward? Canada doesn’t have the same rights but could still be interesting learning.

Value of water to the economy in PNWER. US BCA has been trying to better understand value of water. Also need to consider population growth, economic growth, environmental performance, and sustainability. There is a big difference between cost, price, and value for anything, and particularly water. Could use pricing to improve water efficiency and conservation. Need to have a good understanding of research agendas to share learning.

John, MLA SK: Worldwide issue relates to green water vs. blue water. Swedish economist talks about growing food with green water (moisture from the sky) not blue water (aquifers, rivers, and lakes). Much of our discussion is around use of blue water – aquifers are going down. Now countries are looking to grow food elsewhere – the most efficient way to transport water around the world is in a grain of wheat. Alberta Innovates and University of Alberta are looking at blue water, green water, and fossil water to address the topic in an integrated way.

World population is 7.2 billion people now and will grow to 9 billion.

Adele at University of Toronto: use of satellite and remote sensing technologies to manage groundwater use, flooding, and aquifers.

*Question*: How can we continue the dialogue between meetings, easily share experiences and case studies without having to be in the same room?

*Response*: Set up (or use, if already established) a Water Policy Group LinkedIn page to share information and learning.

What are the struggles with the values of water and pricing water?

No shortage of literature and examples in the world. In the Western world, it is the location of the decision makers and the voters that prevents the conversation. Need to start building political will from the bottom up. PNWER can hold a webinar with experts and invite people to participate. Group called Carpe Diem West offers monthly webinars on the topic with an open dialogue amongst participants.

***Assignment:*** Bring a friend to the Columbia Basin Symposium this afternoon.