**From your perspective as a community leader in Northern Colorado, what is your key takeaway from today’s session?**

* The realities of water availability for future growth have not been broadly adopted and integrated into current population and economic development planning ... Tragedy for the Unmanaged Commons.
* The thing that really stuck with me was the point that Patrick made about the affordability of homes in our area as the cost of water approaches 5X the cost of land. How do we limit growth (because unlimited growth is unsustainable w/ limited water) but still make homes affordable / attainable for folx who have lived here forever?
* Affordability is one of the biggest obstacles along the front range and other parts of Colorado. As Patrick McMeekin mentioned they source water first and land after as water is much more valuable than the land. I believe in his example the water they purchased 5 years ago for a project that just got approval would be 5x as much today. It sounds like water could deter many developers / builders from doing business along the front range. The other item was just how expensive water was in NOCO compared to the metro area.
* My key takeaway from today’s session is the value of water. I gave my presentation on how economists want to move away from focusing solely on maximizing the value of water, but it’s hard to do that when we heard so many perspectives on how valuable water is in a variety of industries. I liked how each of our presenters shared different valuable uses of water, when and where it makes sense to conserve, and what water shortages (and sky high prices) mean to them.
* We have to work regionally to identify and solve water supply, pricing, and delivery issues.
* While the presentations on the costs of water and community growth were very important, the one that made the greatest impression on me was on Agricultural Perspectives by Jim Yahn.  From my time in New Mexico and now in Colorado, the degree of influence of groundwater on the adjacent, connected waterways has always been a struggle to define.  Just recognizing the connection was a milestone for both States, but the degree was hard to quantify.  "Site-specific" was a great objective, but experts (engineers, hydrologists) have endlessly argued on both sides for their organization's point of view.  It was great to hear of the site-specific examples that Jim presented first-hand.  They are real, but still difficult to quantify and therefore protect.  For us on water boards, we must be aware of the connection as we approve developments that will dry up farms, and by extension rivers as well.  Still, in my mind, where is the sweet spot between making irrigation more efficient but still protective of the low flows in rivers?
* The South Platte basin is already using water very efficiently – water is “re-used” seven times before it gets to the state line.
* There are many considerations regarding land and water for developers in northern Colorado. The speakers did a great job describing goals and strategies from the perspective of several different interests.
* Developers and regulators have different perspectives of how water supply/demand should be calculated.
* Thinking outside the box, collaborating and problem solving are key to addressing our water issue. There are some viable options being discussed that seem to have a lot of merit.
* The complexity of groundwater, aquifers, and the management therein, and how the state of Colorado was the first to realize pumping wells deplete the rivers. Lisa Darling's light bulb moment of water recycling for the city of Aurora water crisis in the early 2000s demonstrated to me for every problem or crisis, there could be an obvious solution right in front of you.
* I had been wanting to learn more about Aurora’s reuse system and really enjoyed that part of the presentation by Lisa. Hartford will be looking for a new master planned community to start entitling in later 2023 and we always start with finding the water. That includes potentially looking at ATMs or other sharing, reuse, or innovative ways to acquire water and make it last longer. We’re going to continue discussing that internally but I’ll want to research SPROWG and similar efforts.

Jim’s presentation was fascinating and I am really impressed with how the Poudre is managed and how the water is reused multiple times. I figured some of that was going on, but it is to a much greater extent than I would have thought.

* I found the explanation of seepage and return flows to the river interesting during Jim Yahn’s presentation. I think working and living in a highly dense environment when you hear that primary water user in the state is agriculture there are a lot of comments or thoughts that agricultural users should be more efficient with their water use. Yet, we do not really understand that their increased efficiencies would cause a damage to other water uses downstream. Additionally, it was interesting to learn that by the time they are using the water on the plains it has already been used 6-7 times.
* My key takeaway from our November session is that we are developing the Front Range of Colorado on the backs of farmers. We, collectively, are putting the pressure on them to dry land farm, lease to solar or oil and gas development, sell their land and the water rights that go with it to be turned into housing. What does this mean for the future of development, for famers and for healthy food sources for coming generations?
* It was interesting to hear the varied perspectives of the speakers. I had not considered many of the concepts expressed in those sessions, and it was great to look at water issues through the lenses of the presenters.
* Just how expensive the water component on a housing development project is.
* Non-Potable. General consensus is that’s the way to go. However, I align with Scott/Windsor concerns. While I understand the treated vs untreated costs, expecting nonpot systems to be the way of conservation seems short sighted. This was much more reinforced by Ben’s book report and the satellite thing. If groundwater levels are still going down, wouldn’t there be a point where Municipalities may be even worse off because they cannot provide nonpot in perpetuity? Especially for nonpot systems that utilize wells for the developments. What is the long term impacts of even nonpot availability?
* CBT – highest price in the country $100k an acre ft (5x increase in a decade)

Water court fees regularly exceed $200k in fees, costs can be over $2M

Avg $/Share is $4M water is 5x the cost of the land South Platte – Denver to NB ag water is re-used 7x (highly efficient)

* My key takeaway from the session today was the “lifecycle” of water and the critical nature of reuse of water. The complexity of the water distribution system and the amount of collaboration that is required to keep it functioning is amazing.
* How significant TBC has fueled growth in NoCO along with the high fiscal tag to purchase acre foot of its water.

The increase in water costs for development can be as much as 10% of the purchase of a home.

How much agriculture helps replenish our rivers through irrigation runoff.

**What did you learn today that encouraged you, discouraged you, or captured your attention to the extent that you could see yourself engaging in it further?**

* This session provided the clearest understanding yet of agricultural complexities regarding water use and the relationship with stream/river health.  Thanks for sharing Jim Yahn with us!
* See answer to #1 – not really sure how we keep our community diverse. I don’t want it to become just another “burb for well to do folx”.
* As with most of the sessions the most encouraging thing is there are really smart and hard working folks that are at the forefront of the water issues in Colorado and other basin states.

The most discouraging thing is affordability. There are a lot of folks that believe the rate at which the population has grown will continue and others that believe it won’t due to affordability. Unless you live on the coasts and are selling in a market that is more expensive than Colorado you can’t afford to live here. The 2 largest healthcare groups along the front ranges, UC Health and Banner, both face extremely challenging situations in recruiting. They have people that accept jobs and then come here to look for housing only to subsequently turn down the job because they can’t afford it.

I really enjoyed hearing from Jim Yahn. It was very interesting to hear him discuss how seepage can impact the flow of the South Platte and how one of the ditches has senior rights, but due to its location may not get water where another ditch down river with junior rights might get more water. Also, interesting that 69% of the ag production in Colorado happens along the South Platte.

* I was encouraged by the comradery of all of these presenters. I think it was Lisa Darling who commented that it wasn’t often that she got to catch up with so many water friends in one day. Often times the media pits these industries against one another (development, ag, water providers, etc.), so it was great to see that in Colorado we have fostered a community of collaborative problem solving and connection to the point where leaders in each of these industries are friends. It makes me more hopeful that collaborative problem solving continues to help us face our shifting water future.
* I was so impressed with our speakers and their knowledge. The water data shared was sobering and very illustrative. I was also so sad to hear about how expensive water is in our area. There must be a solution or a compromise – but I am unsure how or when that will happen. There are so many factors at play with regional growth and housing inventory deficits.
* What encouraged me tremendously was hearing of the work by Steve Malers and the Open Water Foundation, and their approach to data-driven decision support systems, available to all for use in understanding and informing their decisions as water managers.
* Water is now 4-5 times the cost of land for new development.  Buy and dry will not be sustainable – the state will need to require some sort of alternative use agreements so that water can be used for both ag and municipalities when possible.
* I think until there is a consensus on growth in Northern Colorado, housing will continue to be more expensive. Reservoirs are being approved, however 20-30 years to approve 75,000-acre feet reservoirs will not make a dent in the need for water. The decision to stop the Two Forks Dam (1,000,000-acre feet) many years ago seems to have made home affordability worse. It was discouraging to hear considering the reservoir projects that are being delayed by government red tape.
* Developers and regulators have different perspectives of how water supply/demand should be calculated.
* The effect on our agricultural communities with the selling of water rights and the buy and dry policy is troubling, but there seems to be conversations around this policy that hopefully will lead to better balance for municipal and agricultural water use.
* I was fascinated by Jim Yan’s presentation, especially how the South Platte River became "whole again" through water storage and irrigation efficiencies. It was encouraging to see outcomes like increased wetlands around the South Platte and its ongoing benefits to the region. Water markets are a constant pain point in development and growth in Colorado. It would be helpful to have a visual of the cities in Northern Colorado that offer cash-in-lieu to builders and developers and why such municipalities are better prepared for growth because of their water asset inventory. The Economies of Water book report raised an important and valuable question. Why wouldn't we look at residential use charges through an equity lens? Love that!
* I really enjoyed book reports and I think I will probably read Where the Water Goes at some point.

For a long time, I have been reflecting on the similarities between limits and scarcity. The latter is core to our economic system, but I think it can lead to abuse and unhealthy self-interest practices. Limits strike me as similar but different, perhaps sans the fear, and tend to be discussed around collaborative problem solving. If it’s not too bold to say, I think what I’m learning in Water Literate Leaders is that, at least in Colorado, water is less a scarce resource and more of a limited resource. The tone I hear from all the players in the water field is that of collaboratively being in relationship with a limited resource rather than trying to beat one another out for a scarce resource. I don’t have many conclusions from that but I’m just sitting with it. It’s a encouraging thought.

* I would be interested in learning more about SPROWG. I appreciate the innovative ways groups of water users can come together to try and solve potential issues.
* I was discouraged by the sheer cost of development of new Front Range communities and how there may be no winners in that scenario – tenants/buyers that are priced out; developers who cannot do today projects they completed five years ago; and farmers whose crops we cease to irrigate by our insatiable desire to expand. And yet, I was encouraged that affordable housing and creative thinking kept coming up throughout the day – tiny homes on lots in Fort Collins, a description of what affordable housing looks like in Greeley, planned communities with over garage suites for increased density in space, rather than expanding space. The comment that when we talk about water we are also talking about development really resonated with me – the two are intertwined.

I was wowed to learn that increasing efficiency in water use on crops actually reduces return flows to the river.

* I found most of the sessions quite enlightening, as I have little background in the areas covered by the presenters.
* How powerful our multiple use of same water (4-7X) can be. I didn’t fully appreciate that fact.
* I would like to find out more about the SPROG and how it is related to the Platte valley water partnership. I could see me individually or perhaps our Coalition getting involved with that. Do you know whom I would contact for that? Darling? Yahn? Malers?
* look at the Platte Valley Water Partnership – A Collaborative renewable water supply project for muni water suppliers while also increasing and preserving agricultural uses along the south platte river
* I am encouraged by the continuing efforts that are being made to get the maximum benefit from this limited resource. I was surprised to learn about the amount of reuse that is already taking place and the potential for future projects.
* I was encouraged by how much irrigation ditches and agriculture help our rivers.  It was disappointing to hear about the public perception that farmers waste water by not lining the ditches because that means we still need to have more community and stakeholder conversations to accurately discuss processes.

**What questions do you have based on what you heard from today’s speakers and group discussion?**

* As we experience more and more climate migration within the US, should we work together to define the pros and cons/limits of continued movement to Colorado?  Seems like we don't have a clear, or maybe we just have conflicting, vision and policy when it comes to growth and climate change impacts.
* I cannot remember who brought it up – but is Eastern Colorado the best place to grow corn? Perhaps if we focused on lower water use plants for Ag we wouldn’t need to “dry up the river” and wait for it to percolate back in through return flows. Could more stay in the river (decreasing the need to return flows) and make a healthier river?
* One question would be to Steve Malers and how his data might help in my career as a banker.
* This session particularly focused on the cost of water rights in Northern Colorado. I am curious how we anticipate growth when the remaining available units of water costs as much as it does? Additionally, I keep coming back to Jim Yahn’s discussion of how they created wetlands in the high desert with their irrigation ditches. If we see less water in the South Platte River, what are ecological implications of creating our own wetlands and then seeing them dry?
* When we talk about the nexus of the economy and water, I appreciate adding in agricultural business. While municipalities may buy up water rights of farmers and stop growing crops so that neighborhoods can have water, we must look at the ripple affects of that: no local farm means that crop or ranch can’t provide locally produced resources. The community will have to look further out to bring those resources in – which adds to our regional environmental footprint (adding in more truck traffic, emissions, and wear and tear on roads). How are engineers and water managers addressing these issues? How can we educate everyday people on these complex issues and tell these compelling stories to help change local and state policies and behaviors?

We are learning a lot about past water management decisions, projects, failures, and bad ideas. It seems like most of the water management of the early 1900s, and into the mid 1900s were well intentioned, but kind of bad ideas. Does the industry plan to undo any of the mistakes now that we know better? How do we move forward once we learn a previous technology, system or project is ineffective and or dangerous to our watershed’s future?

* I was quite taken by the enthusiasm and experience of Lisa Darling. Her dedication and persuasive capabilities virtually assure her, and her organizations' success. It was great to hear from such an obvious source of positive energy - an inspiration to all. I look forward to hearing more from her.
* No questions
* It seems as though municipal use will ultimately dry up farm ground. The % amount of water going for farm irrigation is getting lower and municipal use % is getting higher. I wonder if the group is looking out to long term solutions not just the current use percentages. Water for housing will definitely increase exponentially in Northern Colorado.
* Non-Potable. General consensus is that’s the way to go. However, I align with Scott/Windsor concerns. While I understand the treated vs untreated costs, expecting nonpot systems to be the way of conservation seems short sighted. This was much more reinforced by Ben’s book report and the satellite thing. If groundwater levels are still going down, wouldn’t there be a point where Municipalities may be even worse off because they cannot provide nonpot in perpetuity? Especially for nonpot systems that utilize wells for the developments. What is the long term impacts of even nonpot availability?
* I think this was the best session yet, giving a picture of what is happening in the water world today in Colorado and some possible new ideas for addressing the water issue.
* Will pivot irrigation be widely adapted in Colorado farming to help with our state's water conservation efforts?
* Playing off the issue of reuse mentioned above, I would like to learn more about the Platte Valley Water Partnership.
* To me the presentations yesterday really alluded to growth in our communities will likely be capped in the future based on the water availability and this will directly impact the affordability in our communities. Therefore, my questions are more around affordable housing rather than water. I.E. There is a lot of collaboration in the affordable/obtainable housing communities to help cut costs, but how else are we going to have to collaborate to ensure we can continue to develop obtainable housing? How do we ensure we can maintain or preserve our existing affordable housing supply? If Prop 123 were to pass, how could the affordable housing providers/developers in the community use those funds to accelerate development in this area before costs become even more limiting? What impact does this have on the missing middle, we are already struggling with?
* The questions I keep coming back to throughout this learning is “is there a better way” and “with the right incentives, how quickly as a northern Colorado community can we replace ornamental lawns (nonfunctional turf) with native grasses, xeriscaping, pollinator habitat to use water smarter, improve soil health and biodiversity”?
* A. I’m wondering how to effectively absorb the new concepts presented, and then apply this new information to how I think about water.

B. How can I effectively utilize Open Water Foundation data? How might our volunteer organization contribute toward expanding their databases?

* How can we find better ways to preserve our agricultural economy while still supporting urbanization. The forces of growth and the economics of the water market will make this very challenging.
* Given the sustained trend for ag to sell water rights to municipalities Jokerst said there was a net gain in economic terms to the State yet there is an obvious and growing cost of loss of ag production, loss of some recreation and loss of open space and rising costs of water rights. we could probably use a natural resource /ag economist to quantify the economic gains against these natural resource losses: Once we know that, whether and how to convert that into a policy proposal to incentivize interruptible supply and ag water sharing and ATM mechanisms. OR if water moves toward money, do we just let the market allocate the scarce resource to the highest purchaser.
* No
* With the increasing demands for water, how are we going to continue to provide for the needs of everyone? If for example, NISP does not get completed, how are the communities that are depending on NISP and in some cases already selling cash-in-lieu for their water bank that is counting NISP water going to make it?
* What has been put in motion to help with the challenges in acquiring water for developments as well as conservation efforts on water management?

Do projects such as Terry Ranch, Chimney Hollow, NIST help problem solve finding and acquiring water for development and a growing need for clean water infrastructure?