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

- Storage projects come in all shapes and sizes. Best practices for long-term planning should include the alternative analysis through NEPA as early as possible and continuously evaluating alternatives during the, often decades long, process is wise.
- The leaders in our local communities are getting very creative about how they secure water for our cities

- Jennifer's information was very interesting and provided a lot of information on the basin and how the states work together. It seems there will need to be a lot of negotiation in the near future to address the lower basin states (mostly CA) and how they will have to further work towards contingency plans as their available water is further diminished if the drought continues and if aridification is taking place in more regions across the basin states. It appears that Powell and Mead could be very close to not being able to provide water and electricity, which is very concerning.

  I thought the information from Sean Chambers was very interesting. I was not aware of the aquifer that was so close to the region and how Greeley is transporting water from it. The other item that was unique is the financing mechanism they used to purchase the water by providing the seller the ability to sell credits to developers etc..

- My key takeaway from today is the importance of Northern Water's involvement in Colorado water supply issues. They manage and develop many important water supply and distribution projects in Northern Colorado. Without these projects life on the Front Range would not be what it is today.
- That our area has created systems and infrastructures for long term water supply via innovative storage projects.
- We were presented with a variety of projects and approaches, illustrating the differences between surface and ground water sources, and expansion of existing assets vs. development of entirely new ones. Greeley is developing a major new ground water source/storage project, while also participating in Northern Water's expansion of Windy Gap with the new Chimney Hollow Reservoir. Northern Water is also developing a new system with NISP (yeea!) with a new, different set of municipalities. Fort Collins is pursuing expansion of its Halligan Reservoir, in addition to its C-BT sources via Horsetooth. All are developing multiple sources as a way to balance supply/demand pressures uniquely for their service areas.
- The massive scale of projects like Chimney Hollow and Glade is amazing. It's one thing to see on a map and another to see it in person.

- I was very impressed with the risk and technical acumen of the City of Greeley Staff to take on a groundwater project to help supply future growth. The project is not without risk, and they approached it with caution and a great deal of due diligence.
- My key takeaway from today's session is in regards to the complexity that surrounds water storage projects. The planning, timetables, permitting, and innovative thinking that is necessary to accomplish storage projects is overwhelming. I appreciate all of the work, dedication, and cooperation necessary to complete these projects.
- The Chimney Hollow reservoir project's success with collaboration with multiple municipalities and the tenacity it took to accomplish this crucially important water storage project for the front range of Colorado.
- Some of my key takeaways were:
  how the stress on the Colorado River System impacts aridification, the Lower Basin overuse, structural concerns at Glen Canyon Dam and the nearing power pool and threat to power generation.
  Seeing the impressive Chimney Hollow Reservoir project from another view and learning about its workforce, construction, wildlife and the municipalities that are collectively thinking forward regarding water storage.
  Northern Water's leadership in providing regional support through water efficiency programs, data collection and delivery, source water protection and interagency cooperation.

- We all need more storage and there are a lot of innovative ways to do it (underground, shared reservoirs, etc…). Even the storage systems in Colorado are collaborative, which is wonderful to see.

- In order for Northern Colorado to continue servicing its existing water needs as well as the anticipated growth in the area, storage of excess water in wet years becomes increasingly important. Projects of this magnitude require participation and buy in from multiple partners. Additionally, these projects often take years and significant financial investment requiring partners and their constituents invest into the future of their communities now for little to no impact to them in the immediate future. It also makes me think about smaller municipalities in our area that may not have had the foresight or access to funds to be proactive in this area and now suffer the consequences.
- Absent
- I really had no idea what an enormous project Chimney Hollow really was. The photos I have seen online and at other NW presentations conveyed that it was a massive undertaking, but there is nothing like seeing it in person. Establishing on-site quarries, a concrete manufacturing facility, and contracting with a Swiss company that imported its own asphalt manufacturing equipment further drove home the magnitude of this project.

The amount of time it takes to build this reservoir – correctly and without shortcuts – is astonishing. As is the over $500M price tag.
I continue to be impressed with the incredible value the Northern Colorado Water Literate Leaders program is! You all are doing an amazing job.

- The collaborative nature of building a $500M Dam underscores the value of partnering on regional water issues, not just on policy, but on developing real infrastructure.
- a) Carl Brouwer believes the Corps of Engineers in Omaha will issue the 404 permit and the ROD by the end of January. He understands that save the poudre will sue to stop the permit. He says save the poudre sued the Northern over chimney hollow and lost, so based on that he thinks they will lose on the NISP 404 permit.
  b) According to Jennifer most of the CO river water is used outside the Colorado river basin.
- The years of planning, collaboration, and future thinking required to put together projects like Windy Gap, Chimney Hollow, Halligan Water Project ect

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?

- Fort Collins mention of GHG impacts from dams captured my attention as a way to connect water with land use planning. I will look more into this topic.
- I am encouraged that the permitting processes that help us protect the environment have led to collaboration between environmentalists & water project developers on these projects. I am discouraged that we are building Chimney Hollow, Halligan & Glade & may have no water to fill them….
- The most encouraging thing when dealing with very complex problems is there are always very intelligent and hard working individuals that are available to solve them. No doubt the situation on the CR Basin is challenging, but I'm optimistic that either mother nature will help in finding a solution and / or the people that are charged with fixing it. This was very evident is our field trip to the Chimney Hollow project. You can see first hand how a complex problem is being solved and it is amazing how long it takes for a project such as that to get approved and completed.
  The most discouraging thing is how California may not be doing what it needs to in order to be prepared for less water given the drought, aridification, and potential inability of Mead and Powell to provide water and power.
- I work with Northern Water quite often in my current position, so I was already fairly familiar with their mission and projects. I continue to be interested in Colorado River Issues and the few temporary agreements that have come out of the compact regarding water source sustainability. I'm interested in what will happen to these agreements as they come to expiration, particularly in conjunction with deceasing overall river health.
- I have a MUCH better understanding of the Colorado River basins and how the compacts were decided, and how current legal disputes may affect long term supply, storage, energy, and water availability in our seven state and two country region. I also was so grateful to receive updates on NISP, Glade Reservoir, Galeton Reservoir, Halligan Reservoir, Terry Ranch, and Chimney Hollow Reservoir. I loved hearing about the projects back to back. I look forward to being part of conversations related to these construction projects.

  The Community Foundation is a convener of water related issues; the water participants are about to start a water communications strategy to educate the public about our challenges and opportunities in the short term and long term. This session has opened my eyes and provided invaluable information.
- Despite the length of time needed to develop new projects, often due to false starts, regulatory changes, environmental activists, and external forces (depressions and war), the course is necessary and required. We must view these projects as long-term, generational efforts, where designs and leaders change over the course of development.

- It seems like it would be impossible to keep track of all of the shuffling of water to make sure no one gets shorted. All of the different projects serve specific stakeholders yet much of the water runs through the same infrastructure. I am thoroughly impressed by the engineers that make it all work.

- I really enjoyed the conversations around groundwater. I feel it is an underutilized source that will become increasingly important in the years to come. Having a geologist that is an expert in groundwater speak to the group would be great.

- Absent

- I am intrigued by the Terry Ranch project that Greeley is working on. The project seems very innovative, from a storage perspective and from a financial perspective. I understand that projects like this are new to Greeley and I appreciate that their due diligence and forward looking approach.
- NISP's Galeton Reservoir project will help 60,000 acres of ag from drying up was encouraging. To see our farmlands drying up at the pace they have this last couple of decades is concerning. Anything we can do to help keep our ag farms producing is an important asset not to be taken for granted in Northern Colorado.

- It was encouraging to hear:

  Nevada and Mexico are sharing sacrifices with Colorado and the Upper Basin as we move toward a shared future with the Colorado River crisis.

  the Terry Bison Ranch Project. I look forward to an in person visit!
- I'll be tracking NISP a lot closer after that session. I didn't fully understand its role in the regional water system but it's really important and I'm optimistic it will be approved. I'm also thinking about the benefit to that for the New Cache and L&W systems, which will be good for ag in the region.

- I am impressed by the collaboration required to bring large water projects together. It is inspiring to see the various organizations work together to bring a project like Chimney Hollow to fruition. I would like to continue exploring the permitting process required for these types of projects as well as the ability for other organizations to sue in order to attempt to impede the progress of such a project.

  Would also be interested in gaining further personal knowledge about the construction of dams and hydroelectric plants.

- Absent

- I really enjoyed Jennifer's presentation about the Colorado River issues. This has been discussed in previous WLL sessions, on the news, and at other water events I've attended. This is so complex, and it really helps me to learn as much as I can about how we got here, where we are today, the process for establishing a path forward, and likely outcomes. Fascinating stuff!
  2) In Carl Brouwer's presentation on NISP I heard some statements that I felt fell short of full disclosure. For example, he made an assertion about the importance of adaptive management in this project. It is my understanding that the adaptive management committee has not met as a group in about 2 years. I would really like to see the committee resume with local representation from Trout Unlimited at the table.
  3) I knew nothing about the ground water project that Greeley Water is working on in lieu of expanding Seaman Reservoir (especially after spending $20M on the Seaman project).
  I appreciated the opportunity to speak with Sean Chambers after his presentation and look forward to continuing that conversation with him. That contact alone would have made the day worthwhile to me.
  4) Seeing Chimney Hollow and thinking about the Halligan Reservoir expansion project made me realize how impactful expanding Halligan may really be. The Nature Conservancy's Phantom Canyon Preserve (immediately below Halligan) is one of my most favorite places on the planet, so I'll definitely be looking for opportunities to engage further. It was also great to meet Jason Graham after his presentation, and I look forward to further engaging with him as well

- The tour of Chimney Hollow was impressive, but the level of knowledge within our water leadership running the respective districts and cities is very encouraging.

- See self engage further; I would give my eyetooth to serve as facilitator, mediator for the Secy of DOI coming declaration of shortage and lower basin response and working toward a compromise:
- interesting dynamics between organizations with different or competing viewpoints ie) Save the Poudre suing Northern Water and the Corps for the Glade Res project

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

- It would be helpful to see the reservoirs/storage locations and the areas that those storage areas serve. The strategies that municipalities have for growth being so dependent on storage options and how to get their purchased water rights to and from those storage options is very interesting.
- My biggest question is - how do we get on the email list to get "public tours" of Chimney Hollow? My engineer friends at work saw my pictures & really want to check it out. Our driver said there was an email list for folx who want to go on a public tour, how do I get on that list? BTW – that tour – COOLEST THING EVER!!

- I would like to know more about the specifics of the approval process for a new reservoir (i.e. Chimney Hollow, Glade etc..). Maybe I missed it, but a timeline of the process and aspects of exactly what goes into it would be interesting information.

- One question that has come to my mind is how Fort Collins is expanding the Halligan Reservoir after Greeley's similar attempt at expanding Milton Seaman Reservoir, which they gave up on. What are the differences between these projects making one possible and the other not?
- We talked about cloud seeding – I don't understand the triggers we use to deploy that technology. Is it just to activate water molecules in the high country and encourage snowfall and eventually snowmelt/river water? Who makes the call on that? How often is it used in our state?
  I wonder: with several under construction reservoir projects, are we as a Front Range region going to run out of future available land/resources for these kinds of storage projects vs. Greeley's Terry Ranch, which is a confined aquifer? Will future generations be hamstrung and unable to create new reservoirs above ground? Are the current reservoirs the most our land area can handle?

- I am pondering the familiar question: do we develop supplies in advance of demand, or are projects developed to meet demand that has grown? In this world, where growth is long-term but supply projects take even longer to come to fruition, we have no choice but to build in advance. Inflation and supply chain disruptions only raise costs, so it's better sooner vs. later. I am reminded of two major efforts in New Mexico, the Aamodt lawsuit, now settled, that will eventually increase the water demand of Northern New Mexico Pueblos and local Hispanic constituents, and the San Juan / Chama Diversion that provides central New Mexico municipal and agricultural water supplies. Were these completely separate efforts, or was the "supply and demand" relationship playing out over the last 40-to-50 years?

- At the end of Brad Wind's presentation, he made the point that there is a lot of water in Colorado but he didn't have time to elaborate. I'd like to hear more regarding the point he was making.

- I would like to investigate what is the status of cloud seeding in Colorado. Brad Wind provided some information on cloud seeding. I would guess that most Colorado residents do not know that cloud seeding is being done.

- Absent

- I would like more information about the Terry Ranch aquifer. More specifically, I understand that Greeley intends to continue to rely on surface water for the time being, and to use the Terry Ranch aquifer in times of need and to replenish the water in wet years. Is the capacity of the aquifer 1.2 million overall, or could Greeley use it to hold more water than that if it was available?
- Is Windy Gap water (and Chimney Hollow) in an increasingly vulnerable position considering the embattled Colorado River rights?

  What is the possibility of the Colorado River Compact renegotiating and diminishing Colorado River water rights in the future?
- With the challenges of future wildfires impacting forest health and our watersheds as well as our energy grids, should we be having dialogue on codifying the Wilderness Urban Interface to include life, property, watersheds, and energy grids?

  What can government do to help further collaboration between private and public agencies regarding a strategy to utilize funds?

  Northern Colorado has great water smart models, how can we get others on board to incorporate these models for their municipalities, counties, and the lower basin?
- I'll be tracking NISP a lot closer after that session. I didn't fully understand its role in the regional water system but it's really important and I'm optimistic it will be approved. I'm also thinking about the benefit to that for the New Cache and L&W systems, which will be good for ag in the region.

- With multiple conservation and conservancy districts in the same geographical area are their redundancies in the responsibilities?

- Absent

- A. How does the skyrocketing cost of CBT shares affect Northern Water's bottom line? B. Are there fair and unbiased resources for keeping up to date on what's happening with the Colorado River Compact? Or even a collection of biased resources that when viewed in combination would allow readers to

draw their own conclusions? C. With the Colorado River Compact expiring in 2026, what will happen next? For example, will it be extended, amended, or "let's call the whole thing off" and take a brand new approach

- I think our class was as inquisitive as I've observed and the speakers/tour guides answered all of my questions. ;)

- What set of carrots and incentives could be offered to lower basin states to reduce current and future usage? Since there are five states in the Lower Basin of the Compact, all likely subject to DOI/BOR orders to cut use, would Congress be willing to appropriate funds for water saving incentives provided the five lower basin states agreed to a proportional match including raising water prices? Why was Arizona so slow to sign the CO compact and ready to sue in 1963?.
  3a) I have a question for Brad wind or his staff. Might you have an email or phone number for a liaison /coordinator for the general manager. For the Big Thompson I would like to find out how much Big T and CBT water is used by the Loveland Fort Collins water district. Thanks
- the differences between conservation district and conservancy district was new to me