

Yellowstone River Compact Commission
Technical Advisory Committee - Spring Meeting
April 14, 2022 via webinar
Meeting Agenda

Zoom Virtual Meeting

8:00-12:00

1.) **Introductions:** Everyone in attendance introduced themselves by agency.

In attendance were the following:

- Montana DNRC-Jake Mohrmann, John Lunzer, Paul Azevedo, Anna Pakenham Stevenson, Christine Schweigert, Mark Elison, Brian Holling, Brian Bramblett
- Wyoming State Engineers Office – Michelle Gess, Brandon Gebhart, Jeff Cowley, Dave Schroeder, Josh Fredrickson, Andrew Linch (Wyoming Water Development Office), Chris Brown (Attorney General's Office)
- North Dakota Dept. of Water Resources - Kimberley Fischer
- NOAA- Todd Chambers, John Wetenkamp
- USGS- Brian Loving, John Kilpatrick, Seth Davidson, Theo Barnhart, Scott Whiteman
- BOR- Clayton Jordan, Anellise Deters
- Montana Climate Office- Kevin Hyde
- Northern Cheyenne Tribe - Jason Whiteman
- NCAR-Dave Gochis, Western States Water Partnership-Vern Tharp

2.) **Any Additions/Revisions to the Agenda**

- a. Address from Montana and Wyoming commissioners and USGS commission chairman, Anna Pakenham Stevenson, Brandon Gebhart, and John Kilpatrick. Kilpatrick suggested the states develop a clear vision and plan for the TAC, including setting specific goals for the TAC and to present this plan and goals at the annual December meeting.

3.) **Hydrologic Updates**

a. **2022 Runoff Forecast (Jim Fahey-NRCS)**

- i. Jim updated the group with an updated Yellowstone River Water Supply Outlook.

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- ii. Snowpack throughout the Yellowstone Basin continues to be lower than average. Upper Yellowstone is at 78% of average, Big Horn is 83% of average, Tongue is 93% of average, and Powder is 88% of average.
- iii. Although basin Snow Water Equivalency (SWE) remains slightly below normal, remote sensing data suggests that lower elevations are melting out much sooner than normal.
- iv. Soil moisture currently is lower than normal.
- v. The water supply on the mid to lower Yellowstone River and tributaries are predicted to be 75% of median quantity or lower.

b. Climate Forecast (Todd Chambers-NOAA)

- i. Todd updated the group with the season's precipitation and the forecast for the Spring/Summer 2022.
- ii. Overall, it has been a dry winter with less than average precipitation.
- iii. Soil moisture is very low, in the 10th percentile, through most of eastern Montana and northwestern Wyoming.
- iv. Upcoming conditions appear to be low to "normal".
- v. Probable flows on the Yellowstone are expected to be roughly ½ of historical normal.
- vi. Current flood potential is at less than 10% for all streams.

c. Hydrologic Update (Brian Loving-USGS)

- i. Brian presented streamflow levels throughout the Yellowstone basin.
- ii. Overall, flows through 2021 peaked earlier than usual, many streams experienced flows below normal to much below normal during much of the 2021 summer, then most streams rebounded to normal flows during the fall of 2021.
- iii. Going into 2022, most streams are below normal.

4.) Reservoir Operations and Storage Update

a. Reservoirs and Rivers of Special Interest:

- i. Respective agency representatives provided verbal updates for current reservoir levels throughout the basin including:

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1. Big Horn Reservoir (Clayton Jordan, BOR)
2. Buffalo Bill/ Boysen Reservoirs (Josh Fredrickson, WY)
3. Lake DeSmet (Dave Schroeder, WY)
4. Tongue River Reservoir (John Lunzer, MT,)
5. Cooney and Glacier Reservoirs (Mark Elison, MT)
6. Yellowstone River (Mark Elison, MT)

5.) New Montana Call Guide – John Lunzer, MT DNRC

- a. John presented the draft version of a call guide model that he has been working on. The model considers current SWE and annual precipitation and will also consider soil moisture and reservoir levels of Tongue River Reservoir. The model is in draft form and a portion of the TAC group will collaborate throughout the 2022 spring and summer in order to refine the model.

6.) Update on DeSmet Reservoir Utilization Project (Andrew Linch, WY)

- a. Andrew presented about the Lake DeSmet Reservoir Utilization Study. The project would pump water from Lake DeSmet (Powder River Basin) into the Tongue River basin as a source of water under times there are calls on the Tongue River basin. Several alternative pipeline routes were presented, one that would include transmission to Sheridan for municipal use. Another outcome of this study is the potential for purchasing water from the Northern Cheyenne Tribe. The project is in draft form and is not currently funded for construction.

7.) Northern Cheyenne Tribe's Drought Monitoring Program (Kevin Hyde, MT Climate Office)

- a. Kevin presented about the Northern Cheyenne Tribe's drought monitoring program which includes the installation of several new Mesonet stations in the Tongue and Powder River basins. A conversation of soil moisture followed. It was noted that the trend has been towards a reduction in soil moisture since 2020 for shallow soil moisture and since 2018 for deep soil moisture.

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8.) Information Sharing

- a. **TRR telemetry upgrades** – Anna Pakenham Stevenson shared that Montana recognizes the importance of publicly sharing real-time collected data. Montana DNRC is currently overhauling the public website and is exploring the feasibility of making reservoir data available through a more user-friendly data portal.
- b. **Wyoming Reservoir Discussion** – David Schroeder shared the process that Wyoming undertakes for measuring current reservoir volumes in the event of a call. David mentioned that reservoir capacity curves had formerly used linear equations, and now were corrected to use polynomial equations which better represent actual volumes as the water rises. David also mentioned that Wyoming would be looking into taking over the former USGS stream gage on the Tongue River at Dayton, WY.

9.) USGS Tongue River modeling – NCASC (Theo Barnhart-USGS)

- a. Theo presented about the Tongue River future climate forecasting model proposal to estimate streamflow and provide the Northern Cheyenne a data-driven water management and planning tool. The project would have several collaborators and an answer on funding is expected within the next few weeks.

10.) Gap Filling Radar Conversation – David Gochis and Vern Tharp

- a. David Gochis and Vern Tharp presented about the Gap Filling Radar project that they had presented at the December 2021 meeting. Focus was added on a conversation centered around funding. The Gap Filling Radar can be expensive, and Vern Tharp expressed a willingness to spearhead identifying funding sources with the support of the YRCC “coalition”. Montana and Wyoming representatives agreed to continue the conversation at a later date.

11.) Upcoming Water User Meetings

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- a. Public Meeting at Sheridan Library regarding the recent water call.
Sheridan County Conservation District will also have a presentation,
April 26 @ 4:30-6:30.
- 12.) Review of 2022 YRCC Meeting to be held on December 1, 2022 in person,
with virtual option, in Billings, MT**