Risk Assessment Scenario for Portfolio Tool

The Gunnison Basin Roundtable submission of Portfolio Tool Scenarios are accompanied by this outline of the basic concepts of our ideas concerning procedures or a process to employ risk management in order to avoid a Colorado River Compact curtailment. It is our belief that any identified scenario or scenario grouping identified by the IBCC, CWCB or any other entity using the information generated by the HB 1177 process must consider risk assessment and risk management tools in combination with the portfolio tool output in water planning for the future.

We understand that other Roundtables will have different risk assessment concerns and priorities, and they should be considered, but above all for the benefit of the State, Colorado's entitlement under the Law of the River should never be over developed nor should we leave water in the river that we have a right to develop. The Gunnison Basin Roundtable has participated in this five year water planning effort in order to communicate our concerns for our own basin as well as concerns that all citizens of the State should have. And we have attempted to identify methods to employ that will assure the citizens of Colorado a future lifestyle that is not entirely unlike what we enjoy today. It is with that spirit that we submit these ideas.

Risk Assessment of water development of the Colorado River for the citizens of the State can be managed in two different views as seen in the eyes of the GBRT.

1. How do we manage development and use of Colorado River water to prevent a Compact curtailment, while allowing for full development of Colorado's entitlement?
2. If we fail, how do we deal with a Compact curtailment under full development of Colorado's Compact entitlement?

The GBRT is of the opinion that time, resources, and total commitment be made to accomplish avoidance of Compact curtailment.

At the November IBCC Meeting the New Supply Sub-Committee presented their report to the IBCC. In that report there is much discussion about risk assessment and risk management. On pages 5, 6 and 7 of that report under Next Steps / Questions is a list of eight questions about methods and process in developing Colorado River water. That list identifies what we think are tools to use in creating a process or procedure to monitor Colorado River water delivery to the State Boundary based upon the Law of the River, and to identify a group of trigger points based on storage levels in the CRSP reservoirs. Those trigger points would be used as an early warning system to prevent a Compact curtailment. It may require a number of such triggers, each reflecting a worsening of hydrologic conditions.

Prioritizations of the tools or methods used to help in meeting the needs created by hitting the respective triggers will be the most difficult part of the process. We also present our ideas of how

the junior-junior water right scenario might be applied to this situation. For the purpose of this example, a "junior-junior water right" is a water right with a priority junior to 2012. We understand that it is controversial, but for discussion purposes, the GBRT makes the following effort to create an example. Also for the purpose of this example, a dry hydrology forecast is less than 80% of the thirty year average, an average hydrology forecast is 80-120% of the thirty year average, and a wet hydrology forecast is greater than 120% of the average.

Trigger Level One: First Level Warning. Assume that the State of Colorado has newly developed storage in place for this purpose. It does not take a great amount of this storage to cover this warning. Approximately X acre-feet (to be determined) combined with an average or wet hydrology forecast for the next year.

Trigger Level Two: Second Level Warning
The difference may be a dry hydrology forecast. The same State storage as above would be used with some level of reduced consumptive water use statewide. Some level of water bank withdrawal might alleviate the problem.

Trigger Level Three: Third Level Warning
The situation continues to worsen because of dry hydrology and Colorado has developed new water rights consuming Colorado River water. These junior water rights have caused Colorado to consume more than our entitlement for the last three years. The trigger will be satisfied by using the State storage and water bank withdrawals identified in trigger two plus 25% reduction in consumption by the junior-junior water right holders. The junior-junior water right holders might be Front Range entities or they might be west slope entities. After one or two years of observing this trigger and meeting the requirements, the hydrology improves and deliveries at the State line allow junior-junior rights uses to return to the trigger level indicated by the amount of the State line deliveries.

Trigger Level Four: Fourth Level Warning
The situation has continued to worsen beyond that in level three. This level of shortage may force market conditions to start to play a greater role in solving the problem. Lease fallowing on both sides of the mountains in addition to those already participating in the water bank might come into play. But a given set of conditions for meeting the trigge have to be structured. State storage and all water bank resources would be used. Junior-junior consumptive use would be reduced 50%. The GBRT recognizes that there will be market driven actions, that we have not identified, that will come into play. As a matter of policy, condemnation or total buy and dry scenarios would not be employed at this level of shortage. Again as hydrology improves, if it does, everything returns to pre-trigger level one conditions.

Trigger Level Five: Fifth Level Warning:
This condition will be identified for our purposes as the last resort to prevent a Compact curtailment from occurring. It would most likely require that all junior-junior rights be curtailed and much of the agricultural water would go to domestic uses on a fallowing basis. The agricultural water would be leased and not sold so that as hydrology and adaptation to reduced municipal consumption becomes the norm, water would return to agriculture. It is our belief that, at some point in the

future, water will be as important for food production as it will be for showers. Preventing a curtailment in this scenario is better than allowing it to occur because the opportunity to return to "normal'' is easier than trying to recover from the effects of dealing with Compact curtailment.

Under some trigger level the market for further Colorado River water development will lose its appeal. Other market forces will start to exert greater pressure on changes of use of existing water rights all over the State. Nevertheless, , we think that between well thought out storage scenarios to obtain as much benefit as possible from big wet hydrology events, using the ten year running average calculation under the 1922 compact, and using a risk management process like the one described above that Colorado should be able to develop its entire Compact entitlement.

Example 2 of trigger response

Trigger Level one: The State would be responding to a situation of severe drought over a number of years. The State identified storage and water bank withdrawals will satisfy the situation.

Trigger Level two: Some number of junior-junior water rights are now diverting and have been for some number of years. Hydrology may be marginal and the forecast is dry. The junior- junior rights are curtailed some percentage or are administered according to priority. For example one right is for east slope use and one is for west slope use, both rights are curtailed 25%. If that allows the system to get back in balance we can expect to return to normal, pre-trigger one operations. If there are a large number of junior-junior rights diverting those rights would be curtailed in priority until the system is back in balance. Most likely the first situation would involve large volume diversions and the second situation would involve a larger numbers of small diversions.

Trigger Level three: The situation continues to worsen because of dry hydrology. Those junior-junior diverters are further restricted to 50%, if the situation involves large diverters. If a large number of small diverters are creating the situation then they will be administered as totally out of priority and other tools will be used to balance the system. Lease fallowing and strict conservation could temporarily be implemented.

Trigger Level four: The situation reaches a critical point, and we have no choice but to curtail all junior-junior rights, understanding that the market will be likely be creating many other potentially negative factors. But it appears to us that recovery from this situation would be far superior to recovery from a full compact curtailment. In our opinion, recovery from curtailment is nearly impossible for agriculture. We think agricultural water will all be purchased for municipal protection from curtailment. In that scenario junior –junior appropriation will continue to the very point of curtailment, without control. Because of the ten year running average with average and wet hydrology to declining hydrology when curtailment occurs those entities depending upon the junior-junior rights will be forced to replace them permanently, thus the buyout or condemnation of large amounts of agricultural water. It appears to us that a curtailment will be in place for a number of years unless an abnormal wet hydrologic event would occur. Therefore another reason agricultural water would be demanded for an extended period of time even if municipal providers were willing to

lease water back to agriculture. The longer water is away from agriculture the less likely agriculture will maintain a viable infrastructure and economic survival.