

# STATE OF COLORADO

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## Colorado Water Conservation Board Department of Natural Resources

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TO: Colorado Water Conservation Board Members

Bill Ritter, Jr.  
Governor

FROM: Michelle Garrison  
Interstate & Federal Section

Mike King  
DNR Executive Director

DATE: July 7, 2010

Jennifer L. Gimbel  
CWCB Director

SUBJECT: **Agenda Item 30, July 20-21, 2010 Board Meeting: Compact Compliance Strategies Study**

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### Background

Section 10 of the 2008 Projects Bill (HB 08-1346) authorized the expenditure of \$500,000 from the Colorado Water Conservation Board construction fund *“for the board to undertake a study to identify issues associated with the administration of state water rights in the Colorado river basin under the terms of the Colorado river and upper Colorado river compacts, to evaluate options to avoid the curtailment of uses if at all possible, and to evaluate options for curtailing uses in Colorado in an equitable manner should the terms of the Colorado river compact fail to be met. The study is to be used by the state to look at options openly for avoiding curtailments if possible and by the state engineer to develop curtailment rules for use in water right administration should curtailments become necessary under the terms of the Colorado river compact.”*

The Board reviewed the draft Request for Proposal (RFP) for Phase I of the study at its March 2009 meeting. Three proposals were received and the consulting team of AECOM, AMEC and Leonard Rice Engineers was selected. Project leaders for this study will be Michelle Garrison (CWCB), Mike Sullivan (SEO), Becky Mitchell (EDO) and James Eklund (AG). The project was temporarily put on hold for budgetary reasons, but is now ready to proceed.

### Scope of Work

The Scope of Work for Phase I of the study was created from the RFP and is attached below. The scope of work is intentionally broad to allow flexibility to address issues as they arise and also to cover confidentiality issues related to some aspects of the study. Comments may be sent to Michelle Garrison at [michelle.garrison@state.co.us](mailto:michelle.garrison@state.co.us).

## **SCOPE OF WORK**

### **INTRODUCTION**

The recent drought has resulted in Lake Powell reaching very low storage levels, levels not seen since the initial filling of Lake Powell. As a result, Colorado and the other Upper Division States (Wyoming, Utah, and New Mexico) believe there is a possibility, although small, of having to operate under certain constraints imposed by the Colorado River and Upper Colorado River Basin compacts. In particular, Article III(d) of the Colorado River Compact provides that “the States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.” Article IV of the Upper Colorado River Basin Compact sets forth general principles to be applied by the Upper Colorado River Commission in the event the curtailment of uses by the Upper Division States becomes necessary to satisfy Article III(d) of the Colorado River Compact. However, it is incumbent on each Upper Division State to determine how it will impose any curtailments assigned to it by the Upper Colorado River Commission and to administer that State’s water rights so as to result in the delivery at Lee Ferry of that state’s share of the quantity of water determined to be necessary by the Upper Colorado River Commission to satisfy the terms of the Colorado River Compact. The development of compact compliance criteria (none currently exist) for the Upper Basin and Upper Division States is being done by the Upper Colorado River Commission and IS NOT a part of this study effort.

To date it has never been necessary to implement any Colorado River Compact curtailments. Nevertheless the recent drought has demonstrated there is a potential for such and has provided an impetus for the State to explore: 1) how it would impose curtailments if necessary under the terms of the compacts (i.e. administer a compact call); and, 2) options available to the State to avoid, minimize or delay curtailments. In 2008, the General Assembly appropriated funds to the Colorado Water Conservation Board to conduct a study related to these two topics. Of particular importance to this study effort is the fact that the Colorado River Compact and the Upper Colorado River Basin Compact exempt present perfected water rights (For purposes of this study only we will use November 24, 1922 as the appropriation date for determining the present perfected rights exclusion) from any curtailments. These rights might be used to help firm critical demands temporarily through voluntary agreements.

### **PURPOSE**

The purpose of this study, which should be viewed from more of a technical perspective than a legal perspective, is to: 1) identify issues associated with the administration of state water rights in the Colorado River Basin under the terms of the Colorado River Compact and Upper Colorado River Basin Compact, 2) develop and evaluate options to avoid, minimize or delay a Compact curtailment of uses if at all possible, and 3) identify, develop and evaluate (pros and cons) concepts for curtailing water uses in Colorado in

the event curtailments are required to comply with Article III of the Colorado River Compact and to implement those curtailments in a manner that will allow the maximum use possible of Colorado's entitlements under the terms in the Colorado River Compact and Upper Colorado River Basin Compact and do so as equitably as possible.

## **TASKS**

The Tasks and deliverables include, but are not limited to the following:

### **WATER RIGHT SUMMARY**

- 1) Identification and analysis of all pre-compact perfected water rights (For purposes of this study only we will use November 24, 1922 as the **appropriation** date for determining the present perfected rights exclusion.) regardless of changes or current status that could be transferred, exchanged or used for other purposes during a curtailment. The goal here is to determine ALL Colorado uses that existed as of November 24, 1922. This analysis should identify and document:
  - a) The locations of all pre-compact perfected water rights in Water Division 4-7 and the major drainage basins within the Water Division in which they lie;
  - b) Estimate the amount of consumptive use (in volume) of the pre-compact water rights by major basin, individually if appropriate, suitable for transfer or exchange (For example, it may not be acceptable to remove water from an orchard for more than a day or rights held by the United States) and categorize such in a meaningful fashion;
  - c) Identify the type of use and the seasonality or period of use during a year; and
  - d) Summarize how much pre-compact perfected water given the current conditions is potentially available to help offset potential curtailments.
- 2) Identification and analysis of all pre-compact perfected water rights that have been changed in Water Divisions 4-7 and the amount of consumptive uses available (in volume) as a result of those change decrees.
- 3) Identification of all municipal and other critical water supplies considered to be uninterruptible. This includes providing the locations of these water rights by Water Division and by the major drainage basins in the Water Division and estimates of the amount of water required by these water rights.

### **ALTERNATIVES TO AVOID, MINIMIZE OR DELAY CURTAILMENTS**

Pre-compact perfected water rights must always be considered in any alternative due to their status in the compacts. In developing the alternatives to avoid, minimize or delay curtailments, the following options should be included:

- 1) Using information from the Water Rights Summary assess the operation of a consumptive use water bank (such as proposed by Western Slope interests in their concept paper) that would provide temporary supplies utilizing pre-compact perfected water rights on a willing lessor-willing lessee basis. Evaluate the administration of a water bank during a curtailment in relation to Colorado water right administration.
- 2) The use of post compact storage (Compact compliance storage pools) so that if a curtailment is necessary, water could be released from discrete storage pools specifically designated for this purpose (e.g. Aspinall Unit in particular Blue Mesa Reservoir). Identify the amount of storage potentially available.
- 3) Evaluate current State water right administration and other State policies that may impact or otherwise limit pre-1922 water rights and suggest changes to these policies and operations or new policies that could protect pre-Colorado Compact uses.

- 4) Evaluate ways to accomplish compact compliance with minimal impact to water users; this may include strict priority administration, administration by water divisions or sub-basins, anticipatory curtailments, complete curtailment of all new uses after a date certain prior to any curtailment of existing uses before that time, curtailments by use types or any combination thereof if deemed feasible.
- 5) Briefly identify and evaluate water supply augmentation options (cloud seeding, etc.) that may be either stand alone actions or elements of a particular alternative.
- 6) During the development of alternatives, identify concepts or administrative options for curtailing water uses in Colorado and administrative curtailment “triggers” to consider in the development of any State compact compliance rules.

We encourage the consultants to consider how the information developed through the Colorado River Water Availability Study would be useful in this process as well as the potential interactions with the Evaluation of Water Supply Strategies. A standard set of questions will be developed for use during the recommended consultations and interviews. Please note that any suggested changes to existing laws and policies or suggested new laws or policies identified in the development of alternatives will be cleared with the Attorney General, State Engineer and CWCB as provided for under the consultation process prior to incorporating any such concept into an alternative.

### **CONSULTATIONS**

1. Consult with project leads and staff from the Office of the Attorney General, State Engineer and CWCB to determine the appropriateness of assumptions for use in conducting the analysis of each proposed alternative or method.
2. Consult with Colorado’s advisors to Colorado’s Upper Colorado River Commissioners.
3. Interview the Colorado River Water Conservation District, Southwestern Water Conservation District, Northern Colorado Water Conservancy District, and Southeastern Colorado Water Conservancy District; and interview other important users of Colorado River Water as identified by the state.
4. Provide presentations to the CWCB upon request.
5. Provide presentations to the Basin Roundtables following the development of a suite of alternatives approved by the Colorado Department of Natural Resources, Colorado Attorney General, State Engineer and CWCB.

### **DELIVERABLES**

A report or reports documenting:

- a. The pre-1922 water right information collected;
- b. The various methods that could be used to avoid, minimize or delay curtailments and a description of how each could be implemented, include screening criteria for the various methods as appropriate;
- c. The various ways that Colorado could accomplish compact compliance and a list of concepts to consider in developing rules for administering a compact call. Potential methods may include but are not limited to: strict priority administration, administration by water divisions or sub-basins, anticipatory curtailments, total curtailment of new water rights after a date certain prior to curtailing any existing users, curtailments by use types to the extent deemed appropriate by the state or a combination if deemed feasible;
- d. Description of the benefits and drawbacks of each proposal for avoiding, minimizing or delaying a curtailment; and

- e. A consolidation of comments received from the Basin Roundtables.

The contractor selected will be expected to hold progress meetings and provide drafts of task memos at appropriate times during the conduct of the study. The contractor will also be expected to respond to review comments. Ten (10) hard copies of the final report and appendices will be provided along with 25 CD's of the same.

### **CONFIDENTIALITY**

Contractor shall comply with the provisions of this section if it becomes privy to confidential information in connection with its performance hereunder. Confidential information includes, but is not limited to, any state records, personnel records, information concerning individuals, and all work submitted for consideration in the performance of decision- and policy-making functions (including correspondence, communications, data and data compilations, analyses, notes, memoranda, drafts, discussion papers, etc.) exchanged between Contractor and the State. All such information shall be deemed "privileged and confidential information" within the meaning of the Colorado Open Records Act (C.R.S. 24-72-204(3)(a)(IV)) and shall not be disclosed to any other person or entity without the express consent of the Colorado Water Conservation Board, the State Engineer, and the Office of the Attorney General. All such information shall continue to be protected from disclosure, without regard to whether the study is completed, by applicable privileges and immunities, including but not limited to the attorney-client privilege, deliberative process privilege, and all applicable privileges and exemptions under the Freedom of Information Act and the Colorado Open Records Act.

### **BUDGET AND PAYMENTS**

The approximate budget for this phase of work is \$300,000. There may be additional phases in the future funded under separate budgets. Invoices will be submitted monthly for the work completed under each task. Five (5) percent of each invoice will be withheld until the completion of the study.

### **AVAILABLE INFORMATION**

1. *Access to the Colorado Decision Support System (CDSS), including all water rights information contained therein and which includes the water rights tabulations of the Colorado State Engineer for the entire state, diversion records, call records and other hydrologic and water use data. A graph of water rights decreed during selected time periods is available for use to help inform the early stages of the study.*
2. *The Statewide Water Supply Initiative (SWSI) and other more recent studies from the CWCB Water Supply Planning Group such as Demand to 2050, Ag Demands, Energy Study, and updated information on nonconsumptive needs, IPPs and recalculated Gap may be used to identify existing and future water needs.*
3. *Discussion or concept papers concerning compact compliance from various organizations and governmental entities. The only one we are currently aware of is the concept paper being developed jointly by the Colorado River Water Conservation District and the Southwestern Water Conservation District.*
4. *Other public sources of information contained in the CWCB and SEO libraries as well as the CWCB water information system.*
5. *Existing hydrologic data may be relied on as necessary, but preference should be given to the utilization of information developed as part of the CWCB's Colorado*

*River Water Availability Study currently in progress.*

6. *Drafts of the “Evaluation of Water Supply Strategies”, specifically the work associated with developing portfolios and the tradeoff tool.*
7. *Colorado River Compact Minutes*

## TASK LIST

- A. Water Right Review
  - 1. Compile and categorize Pre-Compact Water Rights & Uses
    - a. Location and Source
    - b. CU – pre-1922 and current
      - i. dry years, average years, *wet years*
    - c. Type of Use and Seasonality
    - d. Current status/availability for augmentation
  - 2. Demand Study – Compile Needs by Use
    - a. Location
    - b. Current Demand Estimates
    - c. Projected Demands (firm) for scenarios
- B. Develop set of alternatives to Avoid, Minimize or Delay Curtailments
  - 1. Consumptive use water bank
    - a. Review existing reports
    - b. Physical feasibility/water availability
    - c. Potential structure
      - i. Market
      - ii. Procedures, usage, administration
  - 2. Use of post-compact storage
    - a. Reservoir analysis
    - b. Potential storage availability
  - 3. Review of water right administration and policies
    - a. Identify issues that limit pre-compact rights
  - 4. Water Supply Augmentation
    - a. Brief review of augmentation methods
      - i. Cloud Seeding
      - ii. Tamarisk Management
      - iii. Non-Tributary Groundwater
      - iv. Imports
    - b. Risk analysis
  - 5. Other options as identified by stakeholders or state
  - 6. Potential Compact Compliance Strategies
    - a. Evaluate minimizing impact to water users
    - b. Strict priority administration
    - c. Administration by water divisions or sub-basins
    - d. Anticipatory Curtailments
      - i. Other anticipatory actions
    - e. Complete curtailment of new uses from prescribed date
    - f. Curtailment by use type
    - g. Combinations

7. Evaluation of water right administration and policies
  - a. Identify issues surrounding administration of compliance strategies

C. Consultations and Interviews

1. Consult with State of Colorado
2. Consult with Colorado's advisors to UCRC
3. Interview CRWCD, SWCD, NCWCD, SEWCD
  - a. Develop standard interview questions, format w/ state project leads
  - b. Initial interview
  - c. Follow-up interview
  - d. Identify and Interview large users of Colorado River water
    - i. Develop standard interview questions, format
    - ii. Initial interview
    - iii. Follow-up interview
4. Present to basin roundtables following development of approved suite of alternatives

D. Project Management

1. Progress Meetings
2. Memos, Reports and other Deliverables