

# Roundtable Drought Contingency Plan and Demand Management Synopsis

## 1 Purpose

The purpose of the sub-committee and the Roundtable is to provide educational materials regarding the Drought Contingency Plans document and agreement to the entities the Roundtable members represent. The sub-committee's charge is to organize, review, and assemble information for the Roundtable to disseminate to their constituents.

## 2 Definitions/Acronyms/Engaged Parties

LB – Lower Basin States: Arizona, California, and Nevada

CRD – Colorado River Water Conservation District

Compact – Colorado River Compact of 1922

CRSP – Colorado Reservoir Storage Project

CRSS – Colorado River Simulation System

CWCB – Colorado Water Conservation Board

CWP – Colorado Water Plan

CU – Consumptive Use

DCP – Drought Contingency Plan

DCP ICS – Water stored under ICS that is used in the Drought Contingency Plan

DM – Demand Management

DOI – Department of Interior

FRWC – Front Range Water Council

ICS – Intentionally Created Surplus

Initial Units – Initial storage units of the CRSP (Aspinall, Flaming Gorge, Navajo, Glen Canyon)

Roundtable – Southwest Basin Roundtable

StateMod – Colorado's Surface Water Model

SWCD – Southwestern Water Conservation District

UB – Upper Basin States: Colorado, New Mexico, Utah, and Wyoming

UCRC – Upper Colorado River Commission

V,T,C – voluntary, temporary, compensated

## 3 Agreements

These agreements are an interstate planning effort for drought responses to reduce risks associated with reaching critical reservoir elevations at Lake Powell and Lake Mead. These actions would be in addition to the 2007 Interim Guidelines. Guidelines are in place until 2026 with negotiations for post-2026 actions beginning no later than December 31, 2020. These actions will be designed to reduce the increased risks since adoption of the guidelines. To date, modeling studies of the DCPs indicate that, when implemented, the risk of reaching critical elevations in Lakes Powell and Mead through 2026 is significantly reduced.

CWCB provided a statement of support at their November 15, 2018 board meeting for the “*collective efforts of the seven Colorado River Basin States and Federal Government to plan and prepare for drought contingencies in the Colorado River Basin*”.

Below the draft agreements and documents are described. To read the draft documents in their entirety please visit the CWCB or Roundtable’s website. For specific questions regarding the draft documents please direct them to Celene Hawkins, the Roundtable’s CWCB representative.

### 3.1 Federal Legislation

Purpose: To authorize and direct the Secretary to execute the UB and LB DCP agreements and implement the DCP operations.

Need: To avoid claims or controversies that any element of the DCPs conflicts with or is otherwise not authorized by existing law.

Opportunities and Concerns: The UB will be allocated a 500,000 acre-foot “bucket” in Lake Powell for storing demand management water for use under the UB DCP. The LB will be given more flexibility when administrating the law of the river and intentionally created surplus. Federal legislation has yet to be drafted at this point. Concerns surround the potentially proposed language and lack of information available on the legislation.

### 3.2 Companion Agreement

Purpose: This agreement attaches and incorporates the UB DCP and LB DCP documents.

Need: To provide mutual understanding of DCP documents, willingness to obtain federal legislation implement the DCPs, sets forth provisions to resolve claims and controversies, reserve rights and legal positions, and implement a consultation process, and finally serve as mechanism to enforce the terms of the DCP.

Opportunities and Concerns: This agreement is the bridge between the Upper Basin and Lower Basin DCPs.

## 4 Lower Basin Drought Contingency Plan Documents

The LB DCP documents include LB DCP Agreement, Operational Provisions, Arizona agreements, California agreements, and Nevada agreements. The LB DCP agreement sets the terms for the Secretary and LB agreement on LB DCP Operations and includes the Secretary’s commitment to work to create 100,000 AF of water per year until the end of 2026. The Operational Provisions serves as a guidance, in combination with the 2007 Interim Guidelines, to control the LB operations through 2026. These provisions require each LB state to contribute specific volumes of DCP water at certain Lake Mead elevations. It also recognizes that DCP contributions may be created by converting banked stored water (i.e. ICS) to DCP ICS but restricts when DCP ICS can be delivered in the future.

Purpose: These documents require LB conservation and provides for additional flexibilities to accomplish the goals of the LB DCP.

Opportunities and Concerns: By supporting the LB DCPs, this allows the UB to request federal legislation for a storage “bucket” in Lake Powell for future compliance use in Compact compliance; this may be interpreted as a tradeoff for provisions granted in the LB DCPs.

## 5 Upper Basin Drought Contingency Plan Documents

The UCRC passed a resolution in 2014 for the development of an UB DCP to ensure ongoing compliance with the Compact. This resolution identified;

1. The need for a plan to operate certain UB reservoirs to reduce risk of Lake Powell dropping to critical elevations;
2. Investigation of feasibility of temporary, voluntary, compensated demand management programs in the UB; and,
3. The expansion of weather modification programs.

Purpose: The goals of these documents is to reduce risk of Lake Powell reaching critically low elevations and reduce the risk of involuntary curtailment in the UB to maintain compliance with the Compact. Two agreements, the UB Drought Contingency Plan Drought Response Operations and DM Storage Agreement, are proposed to accomplish these goals.

### 5.1 Upper Basin Drought Contingency Response Operations Agreement

This agreement will describe the process for developing operational plans to implement specific triggers to help maintain minimum power pool elevation at Lake Powell. This will be done by conserving water (temporarily) in Lake Powell or by moving water available (and subsequently recovering the storage) from upper CRSP facilities. A target elevation of 3525’ was set to help assure enough water can remain in Lake Powell to protect minimum power pool and infrastructure.

Opportunities and Concerns: A common concern is Lake Powell dropping below power generation elevations and having this directly impact the ability to utilize existing water supplies. The loss of this clean power supply, loss of funding generated by the power production, and threats to maintaining compact compliance are big concerns with wide reaching impacts. The funding generated provides monies for: repayment of CRSP projects; operating and maintaining CRSP projects; complying with EPA, NEPA, and Grand Canyon protection obligations; salinity mitigation program; and the UB projects funded by current Basin Fund MOA.

### 5.2 Demand Management (DM) Storage Agreement

This agreement, which is supported by the UCRC Resolutions in 2014 and 2018 is to explore the feasibility of a temporary, voluntary, and compensated reduction in diversions to conserve water that is otherwise consumptively used. This agreement will evaluate alternatives to facilitate intentional reductions in consumptive use through participant arrangements.

Purpose: The purpose of a DM program is to help avoid the potential need for involuntary curtailment of Colorado River uses; specifically geared to ensure compact compliance. This would be considered a last resort to attempt to avoid an involuntary Compact curtailment.

CWCB Policy Statement: The CWCB provided a policy statement at their November 15, 2018 board meeting regarding DM. The policy is to *“develop the state’s position and approach on whether and how to develop any Upper Basin Demand Management Program that could potentially be implemented within Colorado consistent with state law to avoid or mitigate the risk of involuntary compact curtailment and to enhance certainty and security in the Colorado water supply.”*

The policy statement also included eight strategies to help inform the state’s DM position. These strategies are summarized below:

1. Comply with applicable state law including that no action related to DM cause material injury to other water rights holders.
2. Convene a process to identify and evaluate the issues the state must address as part of any potential DM program to be considered in Colorado and the UB. This also includes considering input and consideration of water rights holders and stakeholders potentially impacted by the application of DM during the public review process.
3. Engage in activities that further the goals of the CWP specific to Chapter 9.1 and Principle 4 of the Conceptual Framework in Chapter 8.
4. The proposed DM program will operate within and be subject to the terms and conditions of the DM Storage Agreement. Specifically identified any water conserved and stored under a DM (1) will be stored at the Initial Units without charge; (2) will be solely for the purpose of helping assure compliance with the Compact; (3) shall not be released from Lake Powell except at the request of the UCRC for the exclusive purpose of helping assure Compact compliance; and (4) will be subject to evaporation assessments and volumetric limitations.
5. Investigate voluntary, temporary, and compensated reductions in CU. CWCB may join the UCRC and other UB states in any evaluation of importing of waters from outside the natural Colorado River watershed to augment the river system for compact compliance purposes.
6. Prioritize avoidance of disproportionate negative economic or environmental impacts to any single sub-basin or region within Colorado while protecting the legal rights of water rights holders.
7. CWCB will work with Colorado’s Commissioner to the UCRC to cooperate with other UB states and the DOI to investigate and potentially develop a regional DM program and to ensure water conserved within Colorado under DM is not diverted and consumptively used by any other state.

Opportunities and Concerns: Many challenges exist while questions remain unanswered when developing a DM program. Concerns exist surrounding working within the prior appropriation system and respecting the way of life of water rights holders, to facilitate voluntary reductions in consumptive use from willing participants. A DM program may

provide opportunities that works for a wide range of parties starting with the individual water right holders to the entire UB. Concerns were specifically raised to CWCB about proportionate contributions from the east and west slopes water users of the Colorado River. While CWCB does prioritize avoiding disproportionate impacts, no quantification of percent or volume allotments by from one sub-basin to another.

## 6 Compact Administration

The CWCB makes a clear distinction between a DM program that is voluntary, temporary, and compensated and mandatory curtailment for Compact compliance. Currently there is no exploration or expectation of an anticipatory (i.e. involuntary) DM program. The CWCB provided a policy statement at their November 15, 2018 board meeting regarding DM. CWCB understands that during the development process of a DM program numerous technical, legal, economic and policy questions will need to be resolved. Current hydrologic trends could hasten the time for formal action necessary to comply with the Compact.

Purpose: In the event that the quantify of water conserved under DM is insufficient to ensure Colorado’s compliance with the Compact, it is the policy of CWCB to “*encourage and collaborate with Division of Water Resources to engage in timely and extensive public outreach regarding the development of any alternative measures or rules for compact compliance administration...Such process would be with the goal, but not the requirement, of achieving general consensus within the state, without constraining the Division of Water Resources’ lawful administration of water rights in order to meet Colorado’s compact obligations.*”

Opportunities and Concerns: The opportunity exists to provide extensive input into the development process of the rules and regulations for Compact compliance administration. Time and again concerns are raised about how the water rights priority system will be implemented (i.e. adjudication vs appropriation date). Considerable concerns surround the administration of water rights in the manner that no injury occurs to other water rights holders.

## 7 Colorado River Risk Study

The SWCD, CRD, and the four west slope Roundtables have embarked on a Colorado River Risk Study. This project is a multi-phase process.

- Phase I laid the groundwork for evaluating a number of different state-wide or sub-basin scenarios dealing with questions of curtailment, demand management, water banking, and risk sensitivity to model variables such as demands and hydrology.
- Phase II included two tasks. Task 1 addressed the questions that were raised during the Phase I process specific to the modeling performed using CRSS. Task 2 focused on the use of StateMod to address in-state questions related to DM, resulting yields of conserved water, water banking, and the potential to couple StateMod with CRSS.
- Phase 3 of the study (funded only by SWCD and CRD) is currently on going and builds on the outcomes from the first two phase. Using the two models, Phase 3 will conduct a number of model runs relating to: (1) baseline simulations and futures conditions;

(2) Compact administration modeling; (3) evaluation impacts of increasing levels of post-compact water right curtailment; and (4) evaluation of 100,000 AF/year and 200,000 AF/year contributions from the UB states to a 1 MAF non-equalized demand management account to compare the reduction in risk of Lake Powell dropping below elevation 3525’.

Model Results: The first two phases of the study yielded a lot of quantitative and qualitative results. In general, the following bullets are key take-aways from the study.

- The likelihood of Lake Powell dropping below critical elevations is small, but impact to UB water users could be catastrophic.
- The deficit volumes at Lake Powell, even after proposed Drought Operations of CRSP reservoirs, could be in the order of millions of acre-feet if critical drought periods repeat.
- It is unlikely that the UB could generate that volume of water in a short period of time through a reactive demand management program.
- A proactive DM program (V,C,T) combined with a water banking program intended to support Lake Powell elevations could significantly reduce the risks. The size of the bank, its location(s), and operating constraints are important considerations.
- StateMod is the best tool for modeling in-state DM activities, non-federal reservoir operations, and yield estimation from participating water rights/users.
- CRSS is necessary for understanding Lake Powell operations and other “big river” issues that are the key drivers to DM requirements.
- The two models (CRSS and StateMod) can be combined effectively to simulate complex demand management questions within Colorado as well as the impacts of those actions on Lake Powell and impacts of basin-wide operations on Colorado water use.