

# Four West Slope Basin Roundtables

## Joint Meeting Agenda

Wednesday, April 25; 10 a.m. to 3 p.m.

Ute Water Building, 2190 H 1/4 Road, Grand Junction, CO 81505

- Colorado Basin Roundtable
- Gunnison Basin Roundtable
- Southwest Basin Roundtable
- Yampa-White-Green Rivers Basin Roundtable

### 10:00 Welcome and Purpose of the Meeting

Chairs: Jackie Brown, YWG; Kathleen Curry, Gunnison; Jim Pokrandt, Colorado; Mike Preston, Southwest

### 10:15 Big River Issues Presentation

**Karen Kwon** – Colorado Attorney General’s Office  
**Brent Newman** – Colorado Water Conservation Board (CWCB),  
Interstate and Federal Section Chief

### 10:45 Big River Questions

### 11:00 Interbasin Compact Committee Panel: the Conceptual Framework

**Eric Kuhn, Russ George, Eric Wilkinson and Jay Winner.**

The panel is structured to include two representatives from the West Slope and two from the Front Range, with **Becky Mitchell, CWCB Director**, serving as moderator. The plan for the panel format is to avoid focusing too much on detailed content and instead address two basic questions:

- **How and why was the framework created?**
- **What is the value of the framework moving forward?**

### 11:30 Conceptual Framework Questions

### 11:45 Box Lunches Served/Working Lunch with Updates

- Endangered Fish Recovery Program: what’s coming next – **Jackie Brown**, YWG Chair
- Potential Basin Implementation Plan (BIP) Revisions, Colorado Water Plan Grant Replenishment, Water Supply Reserve Fund Replenishment, Statewide Water Supply Initiative (SWSI) – **Greg Johnson, CWCB Water Supply & Planning Section Chief**

### Joint West Slope Basin Roundtable Meeting

Wed, Apr 25, 2018 10:00 AM - 4:00 PM MDT

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**12:45 Colorado River Risk Study Summation: Phases I&II**

Eric Kuhn, Colorado River District Retired GM

John Carron, Hydros Consulting

**1:15 Facilitated Discussion of Phase III: Do we do it? If So What Do We Want It to Do?**

**Please refer to questions on pages 4-6 regarding how the facilitators will frame and guide the discussion.**

Mike Preston, Southwest BRT Chair

Kathleen Curry, Gunnison BRT Chair

**3:00 End of Meeting**

# Joint Four West Slope Roundtable Colorado River Risk Study Discussion Guide

4/25/18 - Ute Water Building - Grand Junction, Colo.

At the December 14, 2014 joint meeting of the four West Slope Roundtables, participants requested information to facilitate intra-basin discussion of demand management, should low levels at Lake Powell require that tool, as well as discussion of potential future development of West Slope Colorado River system supplies. In response, the Colorado River District and Southwestern Water Conservation District proposed Phase I of the Colorado River Risk Study. Each district and each Roundtable shared in the costs. This continued into a Phase II, and at the April 25 joint meeting, the four West Slope Roundtables will contemplate the need for a Phase III and what questions it would tackle.

## Major Results from Phase I

1. To maintain the storage levels at Lake Powell above elevation 3,525 feet (above sea level), **demand management would be occasionally needed under all different hydrology and demand scenarios.** Without corrective action (implementing Drought Contingency Plans), **the risk that Lake Powell would be drained below critical levels is real (10-20%).**
2. **Demands and hydrology matter, the drier the hydrology, the more often demand management is needed and the larger the shortages that must be covered. Demands also matter.** For the same hydrology, the higher the level of consumptive uses, the more often demand management is needed. **A 10% increase in Upper Basin depletions roughly doubles the frequency that demand management is needed and doubles the amount of the large shortages** that will have to be covered by demand management.

3. During the rare severe droughts such as 2000-2004 or the 1950s, the amount of water needed by demand management can exceed 1 million acre-feet -- far more than the amount of water that could be obtained by demand management in a single year. **This means that, as a practical matter, demand management will have to be designed as a water bank or reserve account,** where smaller annual contributions are made annually into a “bank” then released to Lake Powell when needed.

**During the presentations to the Roundtables, there were many questions about how the implementation of demand management would impact projects and water use within the individual basins.** The Phase I study used the Bureau of Reclamation’s CRSS (model) which is a good model for operating the Colorado River system (the big reservoirs like Powell and Mead) but can’t be used to look at the details of what happens within the West Slope sub-basins. To address these more specific questions and to consider further system questions, we moved forward with scoping Phase II of the study.

## Major Results from Phase II

Phase II had two basic technical tasks. The first task was to again use the Bureau of Reclamation’s Colorado River Simulation System (CRSS) computer model to look a paleo-hydrology scenario and to consider in more detail a demand-management approach utilizing a demand-management concept of putting a smaller amount (for example 100,000 acre-feet per year) into a dedicated water bank, then using the banked water for demand management. The results of this task were consistent with the Phase I results. **The concept of water bank works provided dedicated reservoir space is available and there is water in the bank when the drought begins.**

The second task was to look at how to use CRSS in conjunction with Colorado’s State-Mod computer model to look at the basin-specific impacts of demand management. State-Mod is water-rights based and models the operation of diversions and projects within Colorado (but ends at the state line). **The task results were successful and we now have the ability look at the basin-specific questions related to demand management options.**

## Moving Forward on Phase III

**Work to date has quantified potential volumes needed** to maintain critical elevations at Lake Powell. During a repeat of extended dry periods (e.g., 1988-1992, 2000-2004), it is possible that drought operations of Colorado River Storage Project (CRSP) reservoirs **would be insufficient to meet those needs – as contemplated by Upper Basin states’ Drought Contingency Planning.** **As much as 1 to 2 million acre-feet of additional water could be required.**

Phase II laid the technical groundwork for detailed analysis of demand-management activities in Colorado (using StateMod), while also allowing for input to and feedback from the broader impacts of basin-wide water management activities (CRSS).

The following questions, gathered over the course of Phases I and II, are provided as a departure point for identifying sets of questions to be addressed in Phase III. Note that some of these may be “universal” in nature, i.e., apply to all West Slope basins, while others may by necessity be sub-basin-specific. Both are necessary and desirable when defining the Phase III scope.

## Questions to consider for Phase III

The Four West Slope Roundtables are trying to understand their abilities to develop water for future growth in each of their own basins against the reality of an extended 18-year drought, low water levels at Lake Powell and the specter of curtailment.

The Colorado River Risk Study makes it clear that demand management is necessary to lower the risk of Lake Powell being drained below critical levels during another extended dry period on the order of 2002-2004. Demand management can be done pro-actively to soften the risk to current water users in a voluntary, compensated way. Or it can be done in the lurch under uncertain application of the Prior Appropriation Doctrine or unknown state compact administration rules. The words voluntary and compensated may not be part of the latter scenario.

### Water Banking

1. Is water banking worth pursuing as a tool to address the risk of wholesale buy and dry and the decimation of western Colorado irrigated agriculture, even though it has funding, administration and storage hurdles?
2. Since some of the shortage numbers in the models are large, what would it look like to spread out demand management savings over a number of years? Is there some annual goal we should be looking at, assuming we can bank the annual savings, to provide the protection we need?
3. If we have a large shortage volume that can't be mitigated by water that we've been able to bank, what are the alternatives to meet that shortage?
4. If we were to bank conserved water, are there ways to bank it in places other than Lake Powell (for example, exchanging it into Blue Mesa)? Do alternate banking locations help solve any problems (shepherding, evaporation, not becoming system water, etc.) or do they create additional problems?

## Augmentation

5. How would different augmentation programs impact water users, reservoir storages and sub-basins?
- a. If each sub-basin were required to produce a specific volume of water?
  - b. If each sub-basin were required to reduce consumptive uses by a pro-rata amount until a “bank” was filled? Pro-rata based on total use? Or based on post-1928 rights?
  - c. If a state-wide program was implemented on all post-compact rights (e.g., 20% of all post -1928)
  - d. If all junior stored water was released before or together with demand management on direct flow right.
  - e. If a water banking mechanism were in place to pre-emptively conserve water as an offset for future calls.
  - f. Is shepherding a foregone conclusion? Do we need to think about unshepherded water yields?
  - g. How do Federal reservoirs or other “mainstem” reservoirs impact demand-management actions?
    - i. Can water be banked there?
    - ii. Can water be shepherded through?
  - h. How do East Slope storage and water supply conditions impact Colorado River Basin risk?
    - i. Does the East Slope condition during drought always impact the West Slope in the same manner?
    - ii. Are there opportunities to take advantage of differing hydrologic conditions east/west to maximize conservation?

## Hydrology

6. What impacts do hydrology and demands have on any of the above?
- a. Example: ability to conserve is limited during drought?
  - b. Example: lack of storage available for banking during wet periods?
  - c. What “additional increment of growth” should be considered in the modeling?

## **Assumptions**

7. What assumptions should be made regarding other States' participation and contribution to deficits at Lake Powell?

- a. Demand-management actions in other Upper Basin states?
- b. Drought Contingency Plan actions in the Lower Basin (which impact Powell elevations)?

## **Other legal, political, economic questions:**

8. What reservoirs could be available for a water bank?
9. What is impact on hydropower revenue, and is there a mechanism to recoup that benefit?
10. What is the cost of eliminating, or greatly reducing, risk, through implementation of demand management and banking? Opportunity cost today, legal/economic injury tomorrow.

## Phase I Technical Background

Phase I of the Risk Study was conducted in 2015. The work addressed the risk of jeopardizing Lake Powell power generation levels -- **if demand management is implemented, how often would it be needed and how much water would have to be provided through demand management** at three different hydrologic baselines and two different demand scenarios.

**The three hydrologic baselines were:**

1. The long-term gage record (similar to the 2012 Colorado River Basin Water Supply and Demand Study),
2. The shorter term “stress test” record (1988- present), and
3. Climate Change (from the 2012 study).

**The two demand scenarios were:**

1. Current Upper Basin consumptive uses growing at a moderate rate (5% over 20 years), and
2. A demand level about 10% higher than current levels. The demand data covered all four Upper Division states and was obtained from the 2012 Study

**The critical study assumptions were:**

1. The Colorado River system will continue to be operated under the 2007 Interim Guidelines,
2. The Lower Basin will successfully implement its Drought Contingency Plan (reducing demands), and
3. In the Upper Basin, the water available from drought operations will be delivered to Lake Powell before demand management water is delivered.

## Big River Challenges: Background Conditions, Actions and Planning

1. Since 2000 to now, the Colorado River system has experienced an extended dry period. **During this 19-year period, the average natural flow at Lee Ferry has averaged about 12.4 million acre-feet per year.** This is about 20% below the long term (1906-2015) average of 14.8 million acre-feet per year.
2. Science suggests that **as regional temperatures increase, this drying trend will continue.**
3. At the beginning of 2000, system-wide reservoir storage (Mead, Powell and the other CRSP reservoirs) was nearly full. **Today system storage is less than 50% full.** The 2018 April to July runoff forecast into Lake Powell is less than 50%.

4. **Annual releases from Glen Canyon Dam (Lake Powell) are controlled by the 2007 Interim Guidelines.** The guidelines were negotiated by the basin states (and the federal agencies) and approved by the U.S. Secretary of the Interior. Under the guidelines, the operations of the Lakes Mead and Powell are integrated. The guidelines will expire after water year 2026 and will have to be renegotiated. The negotiations are scheduled to commence in 2020.
5. **In 2013, to address continuing drought, the basin states began preparing Drought Contingency Plans (DCPs).** There will be two integrated plans, one for the Upper Basin and one for the Lower Basin.
6. **Colorado's Water Plan** was finalized in November 2015. The plan includes what is referred to as the "conceptual framework." The framework was negotiated and approved by the Interbasin Compact Committee (IBCC). **The principles are intended to guide the development of new supplies and the protection of existing uses** within Colorado. **Principle #4 provides that Colorado will take a proactive approach to avoiding a future compact deficit. The program will cover existing uses plus a reasonable** growth within the Colorado River Basin, but not new transmountain diversions.

## Status of the Basin Drought Contingency Plans (DCPs)

1. Development of the **Upper Basin DCP**: The Upper Basin DCP includes three basic elements:
  - a. **Drought operations of the Colorado River Storage Project (CRSP) storage reservoirs upstream of Lake Powell – Blue Mesa, Navajo and Flaming Gorge Reservoirs.** These three reservoirs were authorized under the same federal law as Lake Powell, the 1956 Colorado River Storage and Participating Projects Act. Although smaller, they have the same basic purpose as Lake Powell – re-regulation of the Colorado River so that the Upper Basin can develop its water resources while meeting its compact obligations at Lee Ferry. Under Drought Operations, additional releases will be made from these reservoirs to help maintain Lake Powell above critical levels.
  - b. System augmentation: this consists of **cloud seeding and, in some cases, non-native vegetation control.** This element of the DCP is already underway.
  - c. **Demand Management: Under the DCP, the Upper Division states agree to investigate programs to reduce consumptive uses** (referred to as demand management) as needed to avoid Lake Powell storage dropping below critical levels (and thus avoiding any compact problems). None of the states, including Colorado, has made a formal decision to implement demand management. The commitment is only to study demand management.

- d. What are the critical storage levels in Lake Powell? **The goal of the Upper Basin DCP is to take proactive measures to always have a storage cushion in Lake Powell.** The theory is that as long as the Upper Basin has some storage available, it will have the water on hand to meet its downstream commitments. **The current target (which is subject to change) is elevation 3,525 feet above sea level. At this this elevation, there is only 2 million acre-feet of storage available until minimum power.** There is another 4 million acre-feet of storage below minimum power, but above the low-level outlet works (this is referred to as inactive storage). While the primary purpose of the DCP is to pro-actively meet downstream commitments, maintaining minimum power has major side benefits. Power revenues, pay for the operation of the CRSP reservoirs, repay the federal government for the costs of the projects and fund critical environmental programs. Further, because the capacity of the dam's outlet works drops with the elevation of the reservoir, dropping below minimum power may prevent the Upper Basin from actually meeting its downstream requirements. This is referred to as a compact hole.
2. The Lower Basin DCP: **The Lower Basin DCP,** which covers mainstream uses in and below Lake Mead – not the Lower Basin tributaries – is designed to add to the shortages that are required by the 2007 Interim Guidelines. As Lake Mead drops toward critical storage levels, **defined as elevation 1,020 feet in Lake Mead,** the three Lower Division states ramp up their conservation measures to preserve storage in Lake Mead. **If Lake Mead was forecast to drop below 1,025 feet, then the combined effect of the Lower Basin DCP and the 2007 Interim Guidelines results in a reduction of about 1.2 million acre-feet per year.** Under the LB DCP, if future hydrology turns wet, then the LB states can recover their DCP contributions. Although most of the hydrologic details of the LB DCP have been worked out, California and Arizona must still finalize plans on how each will implement the DCP internally. These detailed plans are very controversial and thus have not been finalized. Because the operations of Lakes Mead and Powell are integrated through the Interim Guidelines, implementation of the LB DCP has a positive benefit in the UB. Hopefully, it will approved, but there are no guarantees.
3. Minute 323 with Mexico: **Under Minute 323,** which is effective through the term of the 2007 Interim Guidelines, Mexico both shares shortages when the 2007 Interim Guidelines require a shortage and, similar to the DCP, they will implement additional conservation measures. The additional conservation measures are contingent upon the LB DCP being approved.

## Principle #4 of the Conceptual Framework in Colorado's Water Plan

[Chapt. 8, pp 14-17](#)

Principle #4 of the Framework is a critical policy statement and the primary reason the West Slope Roundtables asked for the risk study. This principle states that “a collaborative program that protects against involuntary curtailment is needed for existing uses and some reasonable increment of future development in the Colorado River system, but will not cover a new TMD.” The supporting information notes that the collaborative program “should provide a programmatic approach to managing Upper Basin consumptive uses, thus avoiding a Compact deficit and insuring that system reservoir storage remains above critical levels such as minimum (power).” The similarities between the objectives of the Upper DCP and the collaborative program are obvious. During the IBCC discussion of the Framework, it was recognized that the collaborative program and the long term Upper Basin DCP would be the same. Drought operations of the CRSP reservoirs and demand management would be the primary components.

**At the December 2014 joint meeting of the four West Slope Roundtables, meeting participants requested more basic information on demand management.** If demand management is implemented, how often would it be needed and how much water would have to be provided through demand management? To answer these basic questions the River District and Southwestern proposed phase I of the risk study.

## **The conceptual framework reads as follows: Colorado's Conceptual Framework**

In preparation for *Colorado's Water Plan*, the basin roundtables drafted Basin Implementation Plans (BIPs). Front Range roundtables declared a need for a balanced program to preserve options for future development of Colorado River System water, while western slope roundtables expressed great concern regarding additional development of Colorado System water involving a new transmountain diversion project (TMD). This document represents an IBCC consensus to address both Front Range and western slope concerns about a new TMD.

The *IBCC Conceptual Framework* (Framework) sets out seven principles to guide future negotiations between proponent(s) of a new TMD and those communities it may affect, were it to be built. The Framework reflects areas of statewide concern. In generating it, the IBCC's diverse stakeholders thoroughly explored the difficult issues that would surround a new TMD. As such, this Framework may help accelerate future negotiations. However, the Framework cannot take the place of specific negotiations and agreements.

The intent of the Conceptual Framework is to represent the evolving concepts that need to be addressed in the context of a new TMD, as well as the progress made to date in addressing those concepts. The Conceptual Framework refers to several topics that are not exclusively linked to a new TMD, but are related to Colorado's water future. These include conservation, storage, agricultural transfers, alternative transfer methods, environmental resiliency, a collaborative program to address Colorado River system shortages, already identified projects and processes (IPPs), additional Western Slope uses, and other topics. The Conceptual Framework, like the rest of Colorado's Water Plan, is a living document and is an integrated component of the plan. Many of these topics are further discussed in more detail in other sections of Colorado's Water Plan.

The IBCC acknowledges that overdevelopment of Colorado River System water is a serious risk that could result in a Colorado River Compact deficit<sup>a</sup>. All of Colorado's water planning efforts must recognize that risk. The Framework provides a way to think about how

entities in Colorado might develop a future increment of Colorado River System water. The Framework states the realities and issues proponents for a new TMD should expect to address.

### **Principle 1: Eastern slope water providers are not looking for firm yield from a new<sup>b</sup> TMD and the project proponent would accept hydrologic risk for that project.**

Water providers define firm yield differently, but the concept usually represents an estimate of the amount of water a system makes available during a representative hydrologic cycle. A proponent of a new TMD would not seek a firm yield from the Colorado River System, but instead would develop a project that could provide firm yield if operated in conjunction with eastern slope sources of supply, as Principle 2 describes.

Accepting hydrologic risk means that a new TMD would be administered under Colorado's priority system, diverting water only when it is physically and legally available in priority in the basin of origin, and in accordance with the triggers Principle 3 describes. Thus, a new TMD would avoid unacceptably increasing either the risk of a Compact deficit or the burden on existing uses in a demand management program, such as Principle 4 describes.

### **Principle 2: A new TMD would be used conjunctively with eastern slope supplies, such as interruptible supply agreements, Denver Basin Aquifer resources, carry-over storage, terminal storage, drought restriction savings, and other non-western slope water sources.**

It is important for eastern slope parties to demonstrate to the western slope that structures, agreements, and frameworks are or will be in place for eastern slope backup water supplies during times when a new TMD would not be able to divert Colorado River System water. Interruptible supply agreements, Denver Basin Aquifer resources, carry-over and terminal storage, and drought-restriction savings are options for backup water supplies that eastern slope entities would use during years when a new TMD would not be able to divert Colorado River System water. Any entity interested in participating in a new TMD would prepare and share a detailed plan for firming the yield

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<sup>a</sup> A Colorado River Compact deficit occurs when flows at Lee Ferry fall below the obligation of the Upper Division States contained in Article III of the Colorado River Compact.

<sup>b</sup> A "new" TMD means a transmountain diversion project that is not an identified project or process (IPP) in SWSI 2010.

of a new TMD in dry years using some or all of these options. The firming plans should include steps to replace water not available from the new TMD, as well as sufficient supplies to meet the entity's demands, including those that could be met with reuse of a new TMD's water. Each entity would tailor its firming plan to its system's unique strengths and constraints. The tools listed above are options, not requirements.

**Principle 3: In order to manage when a new TMD would be able to divert, triggers are needed.**

Triggers are operating parameters that determine when and how much water a potential new TMD could divert, based upon predetermined conditions within the Colorado River System. Such parameters include, but are not limited to, specific storage-elevation levels in one or more Colorado River System reservoirs, projected inflows at key Colorado River System locations, actual reservoir inflows over specific defined periods, snowpack levels, predictive models—or combinations of these—which would trigger certain actions and prevent others.

Triggers are needed to ensure that diversions by a new TMD do not unacceptably increase the risk to the yield of existing uses of a Compact deficit, or increase the amount of water existing users would have to provide through a demand-management program in order to maintain storage levels in Lake Powell.

Triggers would need to be adaptable as conditions within the Colorado River System change over time, and be legally enforceable by appropriate authorities. Triggers may also need to be modified to reflect the outcome of continuing negotiations among Colorado, other Colorado River Basin States, the federal government, and Mexico regarding the continuation of the 2007 Interim Shortage Guidelines, 1944 Mexican Water Treaty and related Minutes, and other Colorado River System issues. Colorado would modify the triggers over time, as these agreements will provide the ultimate parameters within which a new TMD would need to operate.

**Principle 4: A collaborative program that protects against involuntary curtailment is needed for existing uses and some reasonable increment of future development in the Colorado River System, but it will not cover a new TMD.**

A collaborative program that protects existing uses and an increment of future development is a necessary element of Colorado's water planning, regardless of whether a new TMD is developed. The Framework includes this principle to make clear that a collaborative program would not protect a new TMD.

The collaborative program should provide a programmatic approach to managing Upper Division consumptive uses, thus avoiding a Compact deficit and ensuring that system reservoir-storage remains above critical levels, such as the minimum storage level necessary to reliably produce hydroelectric power at Glen Canyon Dam (minimum power pool). A goal of the collaborative program is that protection of Colorado River system water users, projects, and flows would be voluntary and compensated, like a water bank. Such protection would NOT cover uses associated with a new TMD.

A second goal of the collaborative program is protection of the yield of the water supply systems in place in the Colorado River Basin from involuntary curtailment. To achieve this goal, the program would need to expand to accommodate future western slope growth and growth of existing water supply systems, the pace of which is not now known. Protecting additional consumptive uses will increase the program's scope and challenges. Some basins, such as the less-developed Southwest and Yampa/White/Green Basins, anticipate the need for future development and will seek terms to accommodate it in the collaborative program. Regardless of "when" a use develops, the program would strive to protect uses at the time of shortage, with the exception of a new TMD. By adapting to accommodate increased uses at any given time, the program should not lead to a rush to develop water rights. Section 9.1 of Colorado's Water Plan provides additional discussion of the collaborative program.

The collaborative program will develop in concert with intra- and interstate water policies. The IBCC and roundtables can provide an important forum for sharing the work of ongoing interstate negotiations, scoping technical analyses, and identifying issues of concern at the stakeholder level, as well as providing input to the CWCB as it manages and conducts the technical, legal, economic, and other studies necessary for implementation.

**Principle 5: Future western slope needs should be accommodated as part of a new TMD project.**

If a new TMD were to be built, this Framework assumes that proponents and affected parties would agree to its development as part of a package of cooperative projects and processes that benefit both the eastern and western slopes. The focus should be on pairing the potential new TMD described above with one or more of the following:

- ❖ Compensatory projects and methods (protecting and providing for both consumptive and nonconsumptive needs).
- ❖ A socio-economic compensation fund (as described in the 2010 IBCC “Letter to the Governors”).
- ❖ Other requirements stated in the Conservancy District Act (C.R.S. § 37-45-118).

The parties would develop a new TMD and compensatory western slope project(s) and methods in concert to ensure sufficient funding and hydrology for the whole package. Such an arrangement would provide the necessary mutual assurance that a new TMD would move forward only as a package that also accommodates both the eastern and western slopes.

The increment of additional development Principle 4 discusses will meet some portion of future western slope needs. The purpose of Principle 5 is to indicate that a new TMD may be part of a package of other consumptive or nonconsumptive projects and methods that may need both eastern slope and western slope financial or infrastructural support. Discussion of future western slope needs in relation to a new TMD does not imply that western slope entities would not move forward with additional projects and methods in the absence of a new TMD.

This principle does not imply that the new TMD project proponent would pay all costs associated with providing the basin-of-origin benefits to the basin of origin, beyond those required to mitigate a new TMD’s impacts identified in regulatory processes. Providing these benefits may require building coalitions and finding additional funding.

**Principle 6: Colorado will continue its commitment to improve conservation and reuse.**

**Part A. Municipal & Industrial Conservation and Reuse**

*M&I conservation:* Conservation actions defined in the No and Low Regrets Action Plan should be substantively completed prior to implementation of a new TMD project.

All M&I water providers that are covered entities should do integrated water resource planning that strives to meet the “conservation stretch goal” described in section 6.3.1 of Colorado’s Water Plan. The stretch goal recognizes the need for flexibility by the local water provider to do what is technically, economically, and legally practical for their system as not every conservation practice is appropriate for every community.

Water providers participating in a new TMD project should have active conservation plans and activities approved by the CWCB in place prior to implementation of the project, and high conservation levels, as defined in SWSI, should be reached for new growth relying on water that would be yielded from a new TMD. The active water conservation plans of providers participating in a new TMD should demonstrate a commitment to work toward achieving the conservation stretch goal. These plans should have measurable outcomes. Opportunities for conservation may vary from one community to another.

*Reuse:* Reuse actions defined in the No and Low Regrets Action Plan should also be substantively completed prior to the implementation of a new TMD project, given technical and regulatory feasibility at the time of proposed implementation. Such actions include improved tracking and quantification, development of a statewide reuse goal, development of new incentives for reuse, and education and outreach efforts.

Additionally, water providers that are participating in a new TMD project and that utilize other fully consumable water supplies should have a reuse program to recycle as much water as is technically and economically practical. Existing regulations and policies may limit such reuse, and the ability to make these changes may be beyond the control of the project proponent(s). The State should make every effort to allow for the reuse of these fully consumable water supplies in an appropriate and environmentally safe manner. Legislative and regulatory reform may be desirable to achieve these objectives. If such reform does not occur, key objectives of the water plan may not be realized. Section 6.3.2 of Colorado's Water Plan further discusses reuse.

*Water & land use:* Land-use practices that help reduce water consumption should be supported and encouraged, focusing as much as possible on incentives. Land use is an important component in water conservation; however, further work is needed to determine strategies and partners that can tackle this issue. In partnership with the Department of Local Affairs, the CWCB will initiate additional discussions on this issue along with municipalities, counties, local planning agencies, and elected officials at all levels. Trainings on this issue are forthcoming. Section 6.3.3 of Colorado's Water Plan further discusses land use.

## **Part B. Agricultural Conservation**

When considering agricultural conservation strategies, it will be important to take a site-specific perspective and to consider the potentially negative consequences of altering the timing and the amount of return flows. While some locations lend themselves well to agricultural conservation practices, others do not, and a clear understanding of the affected systems is necessary.

*Current Agricultural Uses:* Many of the BIPs identified the explicit interconnections between agricultural and nonconsumptive uses. In addition, several BIPs are looking to decrease agricultural shortages. As part of this work, each basin should seek to reduce consumptive, non-beneficial use by following the guidelines in the Colorado Agricultural Water Alliance (CAWA) 2008 Agricultural Conservation Paper (e.g., reducing soil-moisture loss where practical through drip irrigation or mulching). Lining of high-priority ditches is another important tool in reducing seepage losses in appropriate areas. Phreatophyte control

presents one of the largest opportunities for reducing non-beneficial consumptive use and should be pursued aggressively, although balancing this with nonconsumptive needs can be challenging. Additional incentives should be developed to assist basins in implementing, where appropriate, agricultural efficiency and conservation practices, supporting the ecosystem services agriculture can provide, and changing crop types to lower water-use crops.

*Future Agricultural Uses:* New, irrigated agricultural lands (currently identified in the North Platte, Yampa/White/Green, and Southwest Basins) should be designed to either use best practices with regard to agricultural conservation and efficiency, or be measurably and explicitly multipurpose by meeting identified nonconsumptive needs.

## **Principle 7: Environmental resiliency and recreational needs must be addressed both before and conjunctively with a new TMD.**

### **Agriculture and Nonconsumptive Partnerships:**

Agricultural water can add flexibility and reliability to meet future water needs. The Framework encourages agricultural partnerships with environmental, recreational, and municipal groups to help sustain Colorado's diverse economic future and healthy environment. In addition, development of all new water projects should consider important agricultural and nonconsumptive gaps that basin roundtables have identified.

**Environmental Resiliency:**<sup>c</sup> Colorado's Water Plan, BIPs, and stakeholder groups across the state should identify, secure funding for, and implement projects that help recover imperiled species and enhance ecological resiliency, whether or not a new TMD is built. Doing so may create conditions that make a new TMD possible, but building environmental resiliency is not the sole responsibility of a new TMD proponent, since environmental and recreational gaps exist now. The Framework encourages addressing these existing gaps meaningfully in the near term as well as in any new TMD-affected areas in advance of building a new TMD. Sources of funding will likely include federal, state, foundation, corporate, and private money, but Colorado will likely need to develop additional funding sources. Colorado's Water Plan recommends actions that improve Colorado's environment, which will ultimately help Colorado achieve environmental resiliency.

<sup>c</sup> Resilience of a stream or watershed can be measured as an ecosystem's ability to recover function after a disturbance, whether acute or chronic.

**Environmental and recreational needs in relation to**

**a new TMD:** In addition, a new, multipurpose TMD could potentially fill remaining environmental and recreational gaps as part of a package of compensatory projects. As Principle 5 discusses, a new TMD will be part of a package that also includes benefits or mitigation for environmental and recreational values. This principle encourages addressing environmental and recreational needs proactively and voluntarily, and up-front in project design. Proponents should include nonconsumptive partners to make the package of projects associated with the new TMD truly multipurpose. A new TMD proponent should avoid, minimize, or mitigate adverse environmental impacts where possible, and provide opportunities for environmental restoration and enhancement. Project proponents must mitigate impacts that result from a new TMD project, even if those impacts occur outside of Colorado. The financial burden of environmental and recreational enhancements, beyond the mitigation required to address the impacts of the new TMD project, will require funds in addition to those that the TMD proponent provides, and may require building coalitions and additional funding opportunities.

[Appendix D](#)<sup>5</sup> includes the complete first draft of the conceptual framework. Once the framework is complete, the points of consensus may serve as the foundation for any new future TMD projects seeking State support, and the framework's considerations will guide and move projects forward in conjunction with State support.

