

CHARTING A NEW COURSE FOR THE COLORADO RIVER: **A SUMMARY OF GUIDING PRINCIPLES** (December, 2014)



PREAMBLE

The Colorado River Basin (CRB) is a region of incomparable natural beauty, economic opportunities, renewable resources, and talented people. And while the CRB is an arid region, nature provides enough water to have a strong economy, healthy environment, and healthy social systems. But the river is facing a crisis, with overconsumption, an unprecedented 15-year drought, and climate change already leading to sudden and worrisome declines in reservoir levels. These declines pose an immediate threat to critical economic and environmental interests in Nevada, Arizona, California, and Mexico. Longer term, water uses in Utah, Colorado, Wyoming, and New Mexico are also at risk.

To achieve a sound environmental, economic and social future will require acknowledging numerous “hard truths” about current river management, and will require significant course corrections going forward. This roadmap outlines—in very general terms—what we believe are the most salient of those hard truths. Future reports will explore these themes in detail. Even in the face of declining supplies and growing populations, we are convinced that, with good management, we can achieve a sustainable, healthy future for the river basin and all its inhabitants.

THE CURRENT SITUATION

- Current trend lines projecting increasing demands and declining supplies are inherently unsustainable—with or without drought. Already there's no “extra” water left; in fact, there are many reasons to doubt that current uses can be reliably maintained in coming decades.
- Over the past century, the river system has been heavily modified by over 200 dams that have transformed the annual hydrograph, water temperatures, and sediment loads, often at the expense of native species and ecosystems. Water uses have also negatively impacted water quality, including salinity loading. Ecological impacts accumulate and magnify as one travels down the river's long course, from relatively healthy headwaters to a delta that has not consistently received flows since the 1960s. The result is a system of widely varied environmental health.
- Water users face a highly uncertain hydrologic future; this uncertainty will continue and is likely to increase with population growth, climate change, and other sources of global change. The ability of water providers to withstand perturbations has declined with the depletion of major water supply “buffers”—particularly reservoir storage and groundwater reserves.
- While the physical impacts of changing regional climate and hydrology pose real and significant challenges, an inability or unwillingness to change management in response is perhaps the greater threat. Flexibility has been limited by past choices related to institutions (e.g., law and policy) as well as management (e.g., infrastructure, reservoir operations, patterns of water use). Efforts to rigidly protect an unsustainable *status quo* are predictable, but are often misguided and dangerous.
- Existing river management occurs within a framework featuring serious deficiencies in process and orientation, including a lack of a basin-wide (watershed) orientation (including the nation of Mexico), the subordination of non-consumptive environmental and recreational uses and values, and the limited participation opportunities for many relevant stakeholders, including the tribes, business interests, taxpayer/ratepayer advocates, and the academic community. Many potential solutions cannot be explored in a legal and political environment that too often pits state against state, sub-basin against sub-basin, and states against the federal government.

- While many notable and hard-fought policy reforms and studies have been completed in recent years, few have addressed the underlying problems, but rather have “bought time” and planted the seeds for more lasting and comprehensive solutions to emerge. The window will soon close for pursuing bold, equitable, cost-effective and sustainable solutions.

PRINCIPLES FOR MOVING FORWARD

- The solutions that are most cost-effective, reliable, equitable, and quickly implemented are those focused on conservation, reallocation, and voluntary shortage sharing. While supply augmentation is viable in some limited contexts (e.g., desalination to drought-proof an urban center), significant system-wide augmentation cannot occur quickly and is likely to never make sense from an economic, environmental, or political perspective, and focusing on this goal is counterproductive to implementing solutions based on limiting demand and reallocating water.
- Solutions must include incentives for changing water use patterns: e.g., improved water pricing, voluntary transfers, subsidy reductions, and so on. The historic failure to manage water with respect to sound economic principles is not merely a problem to lament, but is an opportunity to exploit moving forward. Innovative mechanisms for trading water, money and shortage risk can protect regional economies and can help remove the historic view of water as a zero-sum game.
- The effectiveness of the largely discrete river restoration and endangered species recovery efforts would be greatly aided by an integrated perspective acknowledging the physical connections between river segments, and by a strategic and pragmatic allocation of financial resources that acknowledges the widely varied opportunities for protecting and restoring key resources. Like many elements of Colorado River management, better achieving environmental goals will require a more explicit basin-wide approach to problem-solving.
- Successful solutions must satisfy economic, environmental and social objectives using a risk management perspective. Defining success purely in terms of sustaining existing consumptive uses is too narrow. Similarly, leaving the design and execution of solutions to only those with this narrow mindset may simplify decision-making, but ensures an unsuccessful resolution of the basin’s underlying problems.

- Preferred policy options are those that are flexible and iterative, use science and economics, and that feature a sound collaborative structure that allows constant reassessment and adjustment over time (within well-defined rules and process). Steady and deliberate adaptations in advance of crisis are preferable to sudden and disruptive change.
- Everyone who has received benefits from the river has a responsibility to support solutions through conservation, funding and other suitable mechanisms. No water user should expect a “free pass” in implementing management reforms.
- Without a significant infusion of new funding, lasting and sustainable solutions will not be achieved. To date, the amount of money invested to protect and restore the river is woefully inadequate, and is dwarfed by the resources spent to facilitate over-consumption. Funding is most needed to assist agriculture with conservation and efficiency, to aid tribes in developing water-smart economies, to protect communities adversely impacted by management reforms, to enhance the functioning of water infrastructure, and to restore the integrity of environmental systems.

