



**Colorado River Basin Stakeholders *Moving Forward*
to Address Challenges Identified in the Colorado River
Basin Water Supply and Demand Study**

Phase 1 Report: Executive Summary

A Product of the *Moving Forward* Effort



Executive Summary

In 2012, the Bureau of Reclamation (Reclamation), in partnership with the seven Colorado River Basin States¹ (Basin States) and in collaboration with a wide spectrum of Colorado River Basin (Basin) stakeholders, published the most comprehensive study of future Basin supply and demand ever undertaken. The Colorado River Basin Water Supply and Demand Study (Basin Study) confirmed that, in the absence of timely action, there are likely to be significant shortfalls between projected water supplies and demands in coming decades. The Basin Study also confirmed that a wide range of solutions are needed to mitigate and adapt to such shortfalls, which are likely to affect each sector (agricultural, municipal, energy, and environmental, for example) dependent on the Colorado River and its tributaries.

In response to the findings of the Basin Study, in May 2013, Reclamation and the Basin States, in collaboration with the Ten Tribes Partnership² and conservation organizations, initiated the *Moving Forward* effort to build on future considerations and next steps identified in the Basin Study.

The *Moving Forward* effort builds upon and enhances the broad, inclusive stakeholder process demonstrated in the Basin Study with an ultimate goal of identifying actionable steps to address projected water supply and demand imbalances that have broad-based support and provide a wide-range of benefits. The *Moving Forward* effort is being conducted in a phased approach. Phase 1, which was funded by Reclamation and the Basin States, began with the formation of a Coordination Team and three multi-stakeholder workgroups that focus on water conservation, reuse, and environmental and recreational flows. The Phase 1 Report documents the activities and outcomes of the workgroups during this phase.

Commenting on the information provided in the Phase 1 Report is encouraged. Written comments should be submitted within 90 days following the

release of this report. The comments will be summarized and posted to the *Moving Forward* website and will be considered in future *Moving Forward* phases. Instructions for submitting comments are provided at: <http://www.usbr.gov/lc/region/programs/crbstudy/MovingForward/index.html>.

1.0 Need for Action in the Colorado River Basin

Today, between 35 and 40 million people³ rely on the Colorado River and its tributaries for some, if not all, of their municipal water needs. These same water sources irrigate nearly 4.5 million acres of land⁴ in the Basin and the adjacent areas that receive Colorado River water, generating many billions of dollars a year in agricultural and economic benefits. There are 22 federally recognized tribes in the Basin for whom the Colorado River and its tributaries are essential as a physical, economic, and cultural resource. The Colorado River and its tributaries provide habitat for a wide range of species and flows through seven national wildlife refuges and 11 National Park Service (NPS) units⁵; and provide a range of recreational opportunities which add significant benefits to regional economies. Hydropower facilities in the Basin can supply more than 4,200 megawatts of vitally important electrical capacity to assist in meeting the power needs of western states, reducing the use of fossil fuels. In addition, the Colorado River is vital to the United Mexican States (Mexico). The Colorado River Basin is depicted in Figure 1.

³ The Basin Study estimated 40 million people by 2015 in the portion of the Basin and the adjacent areas that receive Colorado River water in the U.S. See Basin Study, *Technical Report C* for additional detail. Estimate of 35 million people is based on the 2010 U.S. Census Bureau population data from cities within planning areas (as defined in the Basin Study) that receive Colorado River water.

⁴ The Basin Study estimated about 5.5 million irrigated acres by 2015 in the portion of the Basin and adjacent areas that receive Colorado River water in the U.S. See Basin Study, *Technical Report C* for additional detail. This number was updated to 4.5 million irrigated acres by the Agricultural Workgroup to better reflect acreage in adjacent areas potentially receiving Colorado River water.

⁵ While there are more NPS units within the Basin, 11 are included in the NPS' Colorado River Program.

¹ Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming

² Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Jicarilla Apache Nation, Navajo Nation, Quechan Indian Tribe, Southern Ute Indian Tribe, Ute Indian Tribe of the Uintah and Ouray Reservation, Ute Mountain Ute Indian Tribe



Note:
Similar to the Basin Study, the scope of the *Moving Forward* effort is limited to the portion of the Basin and adjacent areas that receive Colorado River water within the U.S.

The challenges and complexities of ensuring a sustainable water supply and meeting future resource⁶ needs in an over-allocated and highly variable system such as the Colorado River have long been recognized and documented by Reclamation, the Basin States, and many stakeholders. Consequently, for the last century, significant investments have been made in constructing infrastructure, developing other water resources, and implementing innovative conservation programs and policies to sustain current and future supplies.

These challenges will likely increase in the future due to continued population growth coupled with significant uncertainty regarding future water supply. The Basin States are some of the fastest growing in the U.S. and the communities and economies of major cities such as Albuquerque, Denver, Las Vegas, Los Angeles, Phoenix, Salt Lake City, and San Diego are in part dependent, or in the case of Las Vegas, almost entirely dependent on the Colorado River for water supply. As water demand for municipal and agricultural purposes increases to serve the needs of growing populations, ensuring the availability of water for non-consumptive uses such as the environment, recreation, and hydropower becomes increasingly challenging. Both consumptive and non-consumptive uses face increasing levels of risk. Water supply uncertainty is further compounded by the potential impacts from climate change. Evidence indicates increased future climate variability in the Southwest, which may include longer, more extreme dry (and wet) periods than previously observed.

It is impossible to know the precise trajectory of future water supply and demand or how those trajectories may impact the reliability of the Colorado River and its tributaries to meet Basin needs. The Basin Study confirmed that, absent future action, the Basin faces a wide range of plausible future long-term imbalances

between supply and demand. This imbalance, computed as a 10-year running average, ranges from no imbalance to 6.8 million acre-feet (MAF) with a median of 3.2 MAF in 2060⁷. The assessment of impacts to Basin resources found that any long-term imbalance will impair the ability of the Colorado River system to meet the needs of Basin resources resulting in negative impacts (for example, reduced reliability of water deliveries for municipal and agricultural purposes, decreased hydropower generation, reduced recreational opportunities).

No one sector can provide the solution for ensuring long-term sustainability. To respond to these future challenges, diligent planning will be required to find adaptable solutions that build resiliency and apply a wide variety of ideas at local, state, regional, and Basin-wide levels. With this in mind, the Basin Study recommended several future actions to move closer towards implementing such solutions. These actions include, as a first step, resolving uncertainties related to water use efficiency, reuse, and environmental and recreational flows by shifting the focus from the Basin-wide approach taken in the Basin Study, to one that explores these opportunities in more detail.

2.0 The *Moving Forward* Effort

The *Moving Forward* effort was designed to pursue several next steps identified in the Basin Study. Central to the *Moving Forward* effort is the recognition that pursuing these areas must be done collaboratively and with a broad, inclusive stakeholder process as demonstrated in the Basin Study. Separate from the *Moving Forward* effort, Reclamation, the Basin States, and others (for example, the Ten Tribes Partnership) are simultaneously pursuing other actions identified in the Basin Study⁸.

⁶ Resources include water allocations and deliveries for municipal, industrial, and agricultural use; hydroelectric power generation; recreation; fish, wildlife, and their habitats (including candidate, threatened, and endangered species); water quality including salinity; flow- and water-dependent ecological systems; and flood control.

⁷ Comparing the 90th percentile supply to the 10th percentile demand results in no imbalance. Comparing the 10th percentile supply to the 90th percentile demand results in a 6.8 MAF imbalance. Comparing the 50th percentile of both supply and demand results in a 3.2 MAF imbalance.

⁸ Other areas identified in the Basin Study currently being explored in other efforts include water banking, water supply augmentation, watershed management, the Colorado River Basin Ten Tribes Partnership Tribal Water Study, climate science research, and data and tool development.

The *Moving Forward* effort is being conducted in a phased approach, and Phase 1 began with the formation of a Coordination Team and three multi-stakeholder workgroups. The three workgroups are as follows:

- Municipal and Industrial (M&I) Water Conservation and Reuse Workgroup
- Agricultural Water Conservation, Productivity, and Transfers Workgroup
- Environmental and Recreational Flows Workgroup

The overall purpose of the workgroups during Phase 1 was to further investigate these areas by documenting past and projected future trends and exploring the opportunities and challenges of various water management actions. Each workgroup identified potential future actions to address critical challenges related to projected water imbalances that provide a wide-range of benefits and have broad-based support.

Each workgroup is led by three co-chairs and consists of members with subject-matter expertise from various stakeholder entities in an effort to bring important and different perspectives to the workgroups. Workgroup membership includes federal and state agencies, local municipalities, agricultural organizations and irrigation districts, federally recognized tribes, non-governmental organizations, consultants, and other interested stakeholders. The Coordination Team is led by representatives from Reclamation and the Basin States and was tasked with guiding and reviewing the workgroup activities.

The Coordination Team and workgroups used a collaborative problem-solving approach to complete their tasks and assist in the preparation of the Phase 1 Report. Chapters 3, 4, and 5 of the Phase 1 Report were contributed by each respective workgroup and reviewed by the Coordination Team. The Phase 1 Report is intended to identify opportunities and potential actions that convey the perspectives of the workgroups regarding the role of their respective sector in being a part of the solution set needed to address the challenges identified in the Basin Study.

3.0 Municipal and Industrial Water Conservation and Reuse

The Basin Study recognized the importance of M&I water conservation and reuse in the future planning and

management of Colorado River water. The M&I Water Conservation and Reuse Workgroup was formed to provide a more thorough understanding of M&I water conservation and reuse throughout the Basin and those adjacent areas that use Colorado River water. The Workgroup documented historical trends in M&I water conservation and reuse in areas that receive Colorado River water, identified current and planned efforts to continue these efforts, and identified opportunities and challenges associated with expansion of water conservation and reuse programs in the future.

Chapter 3 of the Phase 1 Report documents the Workgroup's Phase 1 activities. This chapter represents the efforts of a Basin-wide collaboration of experts in the M&I water conservation and reuse fields. The expertise represented by its members allowed this Workgroup to offer new insights into current and possible future directions for M&I water conservation and reuse in areas that receive Colorado River water.

A short summary of the key findings and messages identified by the Workgroup follows.

- Many of the major metropolitan areas that currently receive Colorado River water, such as Albuquerque, Denver, Phoenix, Las Vegas, Salt Lake City, Los Angeles, and San Diego have experienced significant population growth in past decades and projections for future growth remain high. Although total M&I water use has generally increased in the areas over the past two decades due to increased population, available data demonstrate that water providers in the major metropolitan areas that receive Colorado River water have implemented a wide range of water conservation and reuse measures. These efforts have increased water use efficiency and substantially decreased per capita demand, partially attenuating the effect of population growth. Additionally, since 2000, M&I water use has either remained stable or decreased for many metropolitan areas receiving Colorado River water, despite increases in population.
- On average, per capita water use has decreased by 11 to 38 percent since 1990 and by 10 to 26 percent since 2000 in these major metropolitan areas. Water conservation has played an important role in these savings; however, other factors such as economic, social, and behavioral changes have also influenced water use over time. During the

last decade, the U.S. experienced a steep economic downturn, the Basin experienced its most severe drought in more than 100 years, and some water providers increased water conservation efforts to reduce water use in response to reduced water availability. These factors have each contributed to recent decreases in per capita use.

- Information on current and planned water conservation and reuse programs obtained for the Phase 1 effort suggests that more than 700,000 acre-feet per year (AFY) of additional water conservation and an additional 400,000 AFY of water reuse is planned by 2030.
- The types of water conservation measures, for example metering and billing, public outreach, residential indoor practices, and outdoor landscaping practices, and the extent to which they have been implemented vary extensively among municipal providers and among major metropolitan areas that receive Colorado River water based on water supply portfolios and reliability, climate, demographics, and available funding.
- M&I water providers in the major metropolitan areas that receive Colorado River water have also implemented water reuse to varying degrees depending on geographic, legal, regulatory, and other considerations.
- M&I water providers in the major metropolitan areas that receive Colorado River water will continue to increase water use efficiency and reuse. These efforts play an important role in meeting future demands, reducing or delaying needs for additional water supplies, and increasing the future reliability of water supplies.
- M&I water providers in the major metropolitan areas that receive Colorado River water manage their water supplies conjunctively and some must use surface supplies first to protect groundwater or prevent groundwater mining and its consequences. Additional M&I water conservation and reuse has the potential to reduce the amount of future development of Colorado River water. However, in many regions, conservation and reuse may not result in substantial reductions in diversions of Colorado River water because conservation and reuse are typically used to meet future growth or

offset or delay the need for future water supplies. Municipal water providers are planning to use their full entitlements to Colorado River water.

- Opportunities and potential actions exist to increase water conservation and reuse by major metropolitan areas that receive Colorado River water and, in many cases, are currently being pursued. However, these opportunities will vary depending on many factors, including the extent to which these measures have already been implemented in an area, the cost of these conservation measures, cost of existing and new water supplies, public acceptance, laws and regulations, and other factors.

See Chapter 3 for additional details and information.

4.0 Agricultural Water Conservation, Productivity, and Water Transfers

Common to all of the strategies evaluated in the Basin Study to address future water imbalances was the concept of agricultural conservation at significantly higher levels than currently practiced. By 2060, the Basin Study assumed that an additional 1 million AFY of water savings could be achieved through conservation, water use efficiency improvement projects, and other measures including fallowing. Although agriculture is the largest Colorado River water use at approximately 70 percent, to achieve such savings would be a considerable task given the significant amount of conservation and other related activities already underway. For this reason, the Agricultural Water Conservation, Productivity, and Transfers Workgroup was formed to provide context to the Basin Study estimate of agricultural conservation opportunities. Chapter 4 of the Phase 1 Report documents the Workgroup's Phase 1 activities.

Agriculture is important in both historical and current use of Colorado River water, and reducing agricultural production impacts local economies as well as national food security. Ultimately, the extent to which additional agricultural conservation or other measures may play a role in helping to address water supply and demand imbalances will affect how the agricultural sector is impacted.

A short summary of the key findings and messages identified by the Workgroup follows.

- Data reporting and availability reflect the varying nature and evolution of agriculture across the Basin. Accordingly, consistent water use analyses may not be feasible.
- The types of water conservation measures, for example conveyance system improvements, on-farm efficiency improvements, and consumptive use reductions, and the extent of implementation vary extensively among producers and geographies depending on water supply portfolios, climate, crop mix, and available funding.
- Water use per acre has remained relatively constant historically while productivity has increased Basin-wide by about 25 percent since 1980.
- Increases in on-farm efficiency result in more uniform application of water and may improve productivity but may not result in consumptive use reduction if the water saved is used to increase productivity or by a downstream user. Thus, the potential for water savings varies by location (for example, in or out of the hydrologic basin).
- Many of the advances in agricultural conservation have been achieved as part of programs with a variety of federal, state, and local stakeholders working toward mutually beneficial solutions.
- Available data demonstrate that producers have implemented a wide range of conservation and efficiency measures and often increased productivity as a result.
- Agricultural producers will continue to increase the efficiency of water use depending on factors such as location, crops, economic, and other considerations. These efforts may play a role in improving reliability for agricultural producers and building flexibility for meeting additional demands.
- Opportunities exist for additional agricultural water conservation, transfers, and productivity enhancements, but may become more difficult and costly as they are implemented.

See Chapter 4 for additional details and information.

5.0 Environmental and Recreational Flows

The Basin Study analysis indicated that flow- and water-dependent ecological systems, recreation, and

hydropower generation could be increasingly vulnerable in the future due to increasing water supply and demand imbalances. The Environmental and Recreational Flows Workgroup was formed to provide a more thorough understanding of these concerns. Chapter 5 of the Phase 1 Report documents the Workgroup's Phase 1 activities.

The Workgroup built upon the Basin Study's assessment of environmental and recreational flows to identify ideas for potential future voluntary, non-regulatory solutions that protect or improve ecological and recreational resources while supporting other management goals. These integrated solutions are intended to benefit multiple uses, both consumptive and non-consumptive, including hydropower. As issues pertaining to ecological and recreational resources are inherently site-specific (for example, necessary minimum flows to safely raft a river reach) but also broader in scale (for example, recovery of endangered species), the Workgroup took an approach that investigated both specific sites and the Basin more holistically.

To understand site-specific issues, the Workgroup selected four reaches in the Basin to focus upon and completed an assessment of each reach. The Workgroup also compiled examples of existing programs and mechanisms that contribute to the protection or improvement of ecological and recreational resources to help understand concepts that could be applied in focus reaches or other parts of the Basin. The review of existing programs helped generate ideas for future potential opportunities that would benefit ecological and recreational resources throughout the Basin.

A short summary of the key findings and messages identified by the Workgroup follows.

- Basin Study modeling indicates Basin resources, including environmental, recreational, and hydropower resources, are increasingly vulnerable through time.
- The Colorado River and its tributaries provide important habitat for many native species, including several threatened or endangered species; some of these species are found nowhere else in the world. The Upper Colorado River Endangered Fish Recovery Program, the San Juan River Basin Recovery Implementation Program, and the Lower Colorado River Multi-Species Conservation

Program are examples of existing critical and effective programs that focus on the recovery and protection of many species while allowing for continued water deliveries. This important work should continue.

- Abundant recreational opportunities are supported by the Colorado River and its tributaries. The nine NPS units⁹ linked to the Colorado River accounted for nearly 20 million visits in 2012 and 2013, with total visitor spending exceeding \$1.2 billion and \$1.5 billion, respectively. These and other recreational opportunities contribute to local and regional economies.
- Hydropower facilities in the Basin provide power to over 200 contractors and millions of people throughout eight western states (Arizona, California, Colorado, Nebraska, Nevada, New Mexico, Utah, and Wyoming), while helping support important environmental programs in the Basin in addition to repaying the federal investment in the facilities.
- Potential interrelationships exist between environmental and recreational flows and hydropower resources. As options to protect or improve ecological and recreational resources are evaluated in any future efforts, the effects on all resources, including hydropower, should be considered.
- Though river reaches face unique challenges, some commonalities exist such as threatened and endangered species, threats from non-native fish species, and water quality concerns. Common scientific uncertainties relate to understanding the relationship between flow and ecological and recreational values, and the effect of invasive species removal and native vegetation restoration on flows.
- Many programs and processes that use a range of effective mechanisms currently operate within the Basin to address ecological and recreational resources.
- Cooperative, multi-interest/multi-party voluntary mechanisms have proven to be successful in protecting or improving ecological and recreational

resources, and such mechanisms/programs normally benefit more from broader support among competing interests than mandatory, regulatory mechanisms do.

- Though meaningful and significant steps have been taken to protect or improve ecological and recreational resources, opportunities exist to expand or implement new environmental and recreational flow programs.
- Opportunities exist to protect and improve ecological and recreational resources through programs designed to benefit other Basin resources.
- The potential actions identified by the Workgroup include unique complexities and challenges that would necessitate further exploration and analysis to determine how each could be employed in the Basin.

The Colorado River and its tributaries provide habitat to a wide range of species, including several endangered species, provide recreational opportunities that provide significant benefits to regional economies, and generate hydropower that is a clean, renewable source of energy for millions of households. Balancing the benefits of these resources with other uses such as agriculture and M&I water supplies is a complex challenge. Each reach of the Colorado River and its tributaries is unique and an integrated management approach needs to be considered when implementing future actions to address future water imbalances, while protecting or improving ecological and recreational resources.

See Chapter 5 for additional details and information.

6.0 Summary of Opportunities and Next Steps

Based on insights from data collection, case studies, and exploring successes and challenges of existing programs, each workgroup identified future opportunities and potential actions to advance those opportunities within their particular areas of expertise. These opportunities look to increase or expand M&I water conservation and reuse, facilitate future agricultural water saving or productivity enhancements, and provide environmental and recreational benefits within the Basin. These opportunities are summarized in Table 1.

⁹ While there are 11 units in the NPS' Colorado River Program, the Workgroup focused on the nine units that are considered to be directly linked to the Colorado River and its major tributaries.

The opportunities and potential future actions could help improve the long-term sustainability of the Basin resources and improve the resiliency of regions dependent on Colorado River water. The opportunities were developed to reflect the areas of greatest potential benefit and could be implemented during future *Moving Forward* phases or by stakeholders under separate efforts. Several commonalities emerged from the individual sets of opportunities and actions identified by each workgroup. The groupings below were developed in an attempt to highlight these commonalities.

- **Funding and Incentives:** Each workgroup stressed the importance of developing sources of continuous, sustainable funding. Additionally, pursuing funding and technical assistance opportunities that leverage funds from multiple sources was encouraged. Such sources and opportunities could lead to more rapid, effective, and creative implementation of water use efficiency measures, reuse, and environmental and recreational flow projects. Further, sustainable funding and pursuing leveraged funding opportunities would help ensure that sufficient and stable revenue streams are available over the long-term to accomplish a program's goals and to implement desired projects.
- **Resources, Data, and Tools:** Each workgroup recognized the importance of scientific research, reporting, data management, monitoring, and tool development in effectively and efficiently implementing water conservation programs as well as mechanisms to improving environmental and recreational resources. These items are critical to quantifying benefits and tradeoffs, evaluating cost-effectiveness, and facilitating information sharing.
- **Outreach and Partnerships:** Whether implementing a water conservation program or a project to improve ecological and recreational resources, these efforts are more effectively implemented with improved stakeholder understanding of the project's goals and constraints, broader stakeholder involvement, and stakeholder commitment to the project. Outreach and partnerships facilitate this understanding and encourage broader involvement and can lead to enhanced stakeholder commitment and the design of more innovative programs that have broad support. Additionally, outreach and partnerships may increase the availability of funding sources.
- **Coordination and Integration:** Water management in the Basin is complex. The complexities stem from challenges associated with balancing competing needs such as deliveries for M&I and agricultural purposes, hydropower generation, and environmental protection. Each workgroup recognized the importance of facilitating cross-program coordination and information exchange to improve program outcomes and focus of resources.
- **Infrastructure Improvements:** Improved conveyance and distribution infrastructure and metering devices can reduce losses, reduce operation and maintenance costs, and facilitate other water-efficient investments. These activities provide significant opportunities to both the M&I and agricultural sectors. Both these workgroups identified potential actions to pursue funding measures to replace aging infrastructure, implement enhanced metering capabilities, and expand reuse. Infrastructure improvements can also yield ecological benefits by, for example, decreasing salinity levels.
- **Flexible Water Management:** Opportunities related to creating additional flexibility in water management were identified by both the agricultural and environmental and recreational flows workgroups. Specifically, the expansion of existing or the addition of new programs such as water banking, exchanges, and transfers was identified as activities to enhance flexible water management. Flexible water management was identified as having the potential to be a useful tool in building water supply resiliency for agricultural users in the Basin in addition to facilitating multi-purpose solutions. The environmental and recreational flows workgroup found that the establishment of market-based mechanisms for such programs (for example, water banking) has the potential to further promote multi-purpose solutions, for example incentivizing water conservation activities in regions where flow improvements are needed to provide environmental and recreational benefits.

TABLE 1**Opportunities for Potential Future Actions Identified by Workgroups***The Workgroups did not prioritize their opportunities; therefore, the ordering of these lists does not imply a prioritization.*

| M&I Water Conservation and Reuse Workgroup | Agricultural Water Conservation, Productivity, and Transfers Workgroup | Environmental and Recreational Flows Workgroup |
|---|--|--|
| <ul style="list-style-type: none"> • Increase outdoor water use efficiency through technology improvements and behavior change, and increase the adoption of low-water-use landscapes. • Increase the end-user understanding of individual, community, and regional water use. • Increase the integration of water/energy-efficiency programs and resource planning. • Expand local and state goal-setting and tracking to assist providers in structuring programs. • Increase funding for water use efficiency and reuse. • Increase integration of water and land use planning. • Develop and expand resources to assist water providers in water conservation efforts. • Implement measures to reduce system water loss with specific metrics and benchmarking. • Increase commercial, institutional, and industrial water use efficiency and reuse through targeted outreach and partnerships. • Expand adoption of conservation-oriented rates and incentives. • Expand adoption of regulations and ordinances to increase water use efficiency and reuse. | <ul style="list-style-type: none"> • Increase and/or maintain productivity through more efficient on-farm activities. • Reduce losses and improve operational efficiency through improved conveyance infrastructure. • Pursue flexibility associated with strategic consumptive use reductions (for example, deficit irrigation, crop selection, or fallowing). • Enhance and use mechanisms to facilitate flexible water management (for example, banking, transfers, or exchanges). • Encourage efficient water management through conservation planning and reporting, data management, and tools development. • Foster efficient agricultural water use through sustainable funding and incentive programs. • Increase or maintain productivity and improve water management through soil health. | <ul style="list-style-type: none"> • Develop sources of sustainable funding for environmental and recreational flow projects. • Use structured and cooperative market-based mechanisms to provide benefits to multiple sectors, including ecological and recreational resources. • Develop projects that incorporate watershed management. • Develop partnerships that achieve the protection or improvement of ecological and recreational resources through payment for protection of environmental attributes. • Investigate opportunities to use voluntary water management optimization for the protection or restoration of environmental and recreational flows. • Facilitate enhanced coordination among existing programs. • Support additional capacity-building for existing and new stakeholder coalitions. |

It was recognized that the applicability of such programs are dependent upon physical location and state and federal water law and will need to be vetted in consideration of local economies and related factors. However, such mechanisms are considered to have the potential to offer increased flexibility through partnership opportunities and could produce concurrent environmental and recreational benefits, while meeting water supply needs.

The *Moving Forward* effort builds upon and enhances the inclusive stakeholder process established during the Basin Study with an ultimate goal of identifying and implementing actionable steps to address projected water supply and demand imbalances that have broad-based support and provide a wide-range of benefits. The Phase 1 Report completes Phase 1 of the *Moving Forward* effort.

In Phase 2, which will commence in 2015, the Coordination Team, with input from the workgroups, will integrate and synthesize the Phase 1 opportunities and potential future actions identified by the workgroups and identify several proposed pilot projects. The goal of Phase 2 is the implementation of the proposed pilot projects. The structure of Phase 2 will be determined based on the nature of the pilot projects, however, the collaborative and inclusive approach demonstrated in the Basin Study and Phase 1 will be maintained. Additionally, it is the hope of the participants of the *Moving Forward* effort that the Phase 1 opportunities and potential future actions will be considered and undertaken by willing funding partners and interested stakeholders outside the *Moving Forward* effort.