



# Toward Water Sustainability: A Blueprint for Philanthropy



March 2016

## Note from the Foundations

As the leaders of eight U.S. foundations, we believe philanthropy must play a vital role in the transition to water systems that are more balanced and resilient in the 21st century. Clean, reliable water is essential for every person, economy, and ecosystem, but around the world and here at home, our freshwater resources confront rising demands and mounting threats due to climate change, population growth, pollution, and other stressors.

Our foundations have converged on the issue of water from many different directions. Some of us view water primarily through the lens of public health and social equity. Others are focused on environmental quality and biodiversity, while still others concentrate on energy or sustainable development. We are working together because we all recognize that tackling water challenges will be essential for making progress on many of the environmental, social, and economic problems that our foundations and others are dedicated to solving.

The good news is that we already know how to manage our water more sustainably. Better policies, new technologies, and collaborative approaches have shown that, in an era of extreme weather and increasingly uncertain supplies, we can use and protect our precious water resources more wisely.

Strategic grantmaking has already supported critical reforms and innovative management practices, but with the pressures on our water systems only intensifying, we believe funders must help accelerate this progress and seize new opportunities to transform our relationship with water. Investments in water solutions by the philanthropic, public, and private sectors are simply not measuring up to the escalating challenges we face.

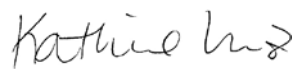
Recognizing the urgent need to solve water problems at scale, our foundations have supported the Water Funder Initiative, a collaborative effort to identify and activate promising water solutions through strategic philanthropic investments in the United States, starting in the American West, where scarcity and reliability of clean water are urgent issues.

The Water Funder Initiative has developed this blueprint as a starting point for funders interested in working on water in the West—and beyond. The blueprint recognizes there is no silver bullet for solving water challenges. Approaches may vary greatly from watershed to watershed. Common solutions must be adapted to local conditions. But there is broad agreement that the six priority strategies outlined in this report will be essential for addressing current and growing water supply and quality problems.

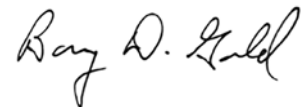
We hope other foundations—as well as funders in the private and public sectors—will join us in committing more resources to advancing water solutions and tackling one of the defining issues of our time. Philanthropy can't do it all, but funders can take risks, invest patient capital, and bring together stakeholders to achieve durable solutions. Fortunately, we still have time to act and ensure that our water supplies support healthy communities, sustainable economies, and vibrant ecosystems.



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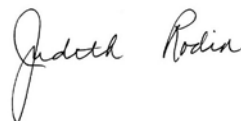
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# Toward Water Sustainability:

## A Blueprint for Philanthropy

### TABLE OF CONTENTS

<b>Executive summary</b>	<b>3</b>
<b>I. Introduction: the need and opportunity in water</b>	<b>6</b>
A watershed moment for philanthropy	6
Guide to document	7
<b>II. Vision and goals</b>	<b>8</b>
Balance and resilience: two long-term goals for water sustainability	8
Windows of opportunities for near-term change	9
Integrating sectors: urban, agriculture, environment, and energy	10
<b>III. Priority strategies for philanthropy</b>	<b>12</b>
Shape healthy water markets	14
Develop new funding sources	15
Improve water governance	16
Drive decisions with data	17
Strengthen communications and build political will	18
Accelerate innovation	19
<b>IV. Funding action plans</b>	<b>20</b>
California Drought Funding Action Plan	23
Lower Colorado River Basin Funding Action Plan	24
Data Funding Action Plan	24
Impact Investment Funding Action Plan	25
Communications and Political Will Funding Action Plan	26
Water Markets Funding Action Plan	26
<b>V. A collaborative approach for philanthropy</b>	<b>27</b>
Building the field	27
Collaborative approaches	27
Appendix 1: Water Funder Initiative Steering Committee	29
Appendix 2: List of experts consulted	30



## Executive summary

**This document offers a blueprint for collaborative and expanded philanthropic action to advance sustainable water management at a scale never before attempted in the water field.** The blueprint was developed by the Water Funder Initiative (WFI), an effort launched by a group of foundations that recognizes the urgent need to solve water problems. WFI is a collaborative initiative to identify and activate promising water solutions through strategic philanthropic investments in the United States, starting in the West where scarcity and reliability of clean water are urgent issues.

**Water is the essence of life and vital to the well-being of every person, economy, and ecosystem on the planet.** But around the globe and here in the United States, water challenges are mounting as climate change, population growth, and other drivers of water stress increase. Public, private, and philanthropic investment in water solutions has not been commensurate with the challenges we face. This underinvestment has led to heightened conflicts and costly litigation among water users as drought and other extreme weather have caused billions of dollars in damage. Precipitous declines in water supplies—both above and below ground—simply cannot be sustained, nor can we continue operating with deteriorating infrastructure and outdated policies that further jeopardize human communities and freshwater ecosystems.

**Philanthropy can—and must—play a more pivotal role in addressing 21st century water challenges.** Effective, strategic, and collaborative grantmaking already has made a difference by advancing critical policy reforms and new water management practices in some places. But with the pressures intensifying, now is the time for the field to rapidly scale up this progress and transform our relationship with water from reactive crisis management to long-term sustainability.

**WFI is starting with a focus on the American West, where nearly a third of the nation’s people and GDP depend on increasingly unreliable water supplies.** In this region, as in many other parts of the world, risks are rising for cities, rural economies, low-income communities, recreational industries, and natural freshwater systems. Although the initial focus is on the American West, many of the approaches are applicable elsewhere in the world, and lessons from other regions can help solve water problems confronting the West.

## Vision and goals

WFI envisions a sustainable water future where:

- Clean water supplies are available for people and nature.
- Freshwater ecosystems are recovering.
- Cities, agriculture, rural communities, and industry continue to thrive by proactively managing the water supply risks that accompany population growth and a changing climate.

To realize this vision, we must achieve two goals:

- 1) **Bring basins into balance for people and nature.** We must use existing supplies more carefully so that, over the long term, we use no more water than is available and our supplies can support vibrant ecosystems, communities, and economies.
- 2) **Strengthen resilience of water systems in a 21st century climate.** Extremes are becoming the norm as the planet warms, and many of climate change’s impacts will manifest through the hydrological cycle. Water management systems must be flexible and resilient enough to cope with times of water stress and mitigate risks to water users.

## Priority strategies for philanthropy

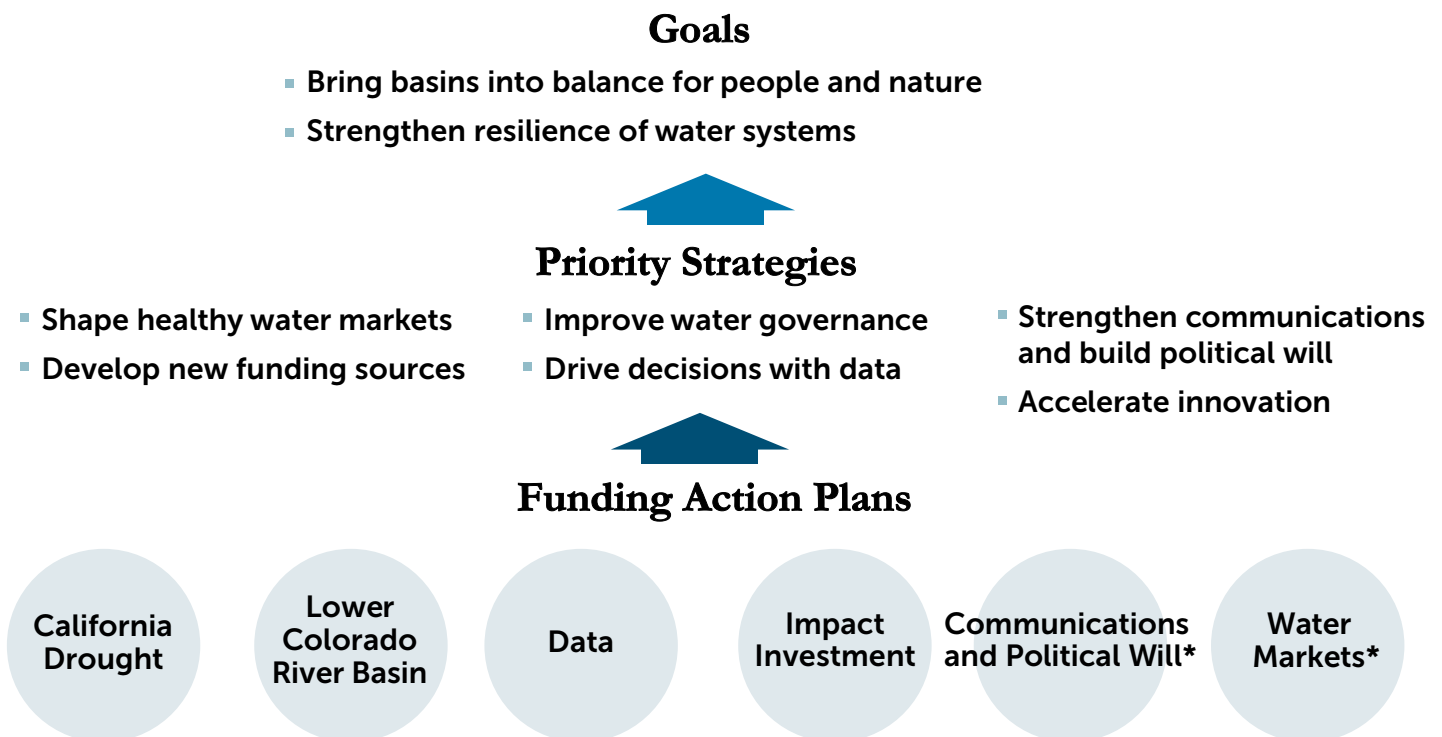
Over the past year, WFI has been gathering the most promising ideas from across the American West—and from a broad spectrum of stakeholders, including NGO experts, policymakers, funders, scientists, farmers, tribal leaders, attorneys, water utility executives, and others. More than 140 people have contributed through individual interviews and six WFI workshops in Arizona, California, Colorado, and Texas.

These consultations have highlighted critical windows of opportunity for reform, and have pointed the way to the following priority strategies that can achieve the goals of balance and resilience in our water systems:

- **Shape healthy water markets:** Meet changing needs, reduce over-allocation, and embed social equity and environmental considerations into fair and transparent markets.
- **Develop new funding sources:** Expand and diversify funding for sustainable water management and infrastructure, including by properly valuing water.
- **Improve water governance:** Promote governance structures that reduce over-allocation, protect environmental values, support disadvantaged communities, and respond to climate variability.
- **Drive decisions with data:** Accelerate the development of open data and information systems to support sustainable management.
- **Strengthen communications and build political will:** Improve the field’s strategic communications capacity and build the political will and constituencies needed to support water management reforms.
- **Accelerate innovation:** Accelerate development and deployment of innovative technologies and practices to advance goals in the urban, agricultural, environmental, and energy sectors.

Figure ES-1:

### From goals and priority strategies to funding action plans



\*Being developed

## Funding action plans

To ramp up implementation of the priority strategies and advance sustainable water management, coordinated philanthropic action is urgently needed. WFI is working with funders, grantees, and other partners to develop detailed funding action plans for philanthropy to advance the priority strategies in the near term while laying the groundwork for longer-term systemic change.

The set of actions in the funding action plans vary according to the strategy, current circumstances, and geography. In some cases, such as data and communications, the plans describe Westwide opportunities to strengthen tools or approaches. By contrast, the regionally focused action plans addressing the California drought and Lower Colorado River Basin help advance multiple priority strategies in a specific place and are tailored to suit the regional conditions. The blueprint summarizes each of these plans and their current state of development.

Additional plans—and campaigns and activities within the plans—will be developed based on the field’s needs, funder interests, opportunities to make progress, and other factors.

## A collaborative approach for philanthropy

Funders of all types—from individual donors to community foundations to the largest philanthropies—can play a crucial role in addressing 21st century water challenges and help ensure that cities, farms, rural residents, and wildlife all have access to the clean water they need to thrive in a changing climate.

First and foremost, the field needs the capacity to implement the strategies and funding action plans described in this blueprint. We need capable, adequately resourced practitioners, experts, and champions to pursue advocacy campaigns, conduct research, represent stakeholders, communicate solutions, explore new ideas, accelerate innovation, and lead all of the other activities that will ensure individuals and institutions make the right water management decisions, day in and day out.

Inherent in the ambition and structure of this blueprint is the recognition that no single philanthropic entity can successfully pursue this set of activities alone. To change entrenched systems across the West and fundamentally transform water management, funders and their grantees will need to partner with other organizations, businesses, and government—and, most importantly, with each other.

Ultimately, greater coordination and collaboration in water philanthropy can result in greater and more effective funding for scalable solutions to today’s water problems. Funders working together can deliver powerful messages to policymakers and industry, leverage public and private sector funding, and identify entry points for funders eager to engage. In other fields, ranging from climate change to public health, we have seen how funders can effectively work together to identify priorities, share lessons learned, fill gaps, and complement each other’s strategies. Water issues are ripe—indeed overdue—for philanthropic attention.

With population growth, climate change, and other pressures mounting, the field must scale up its successes and seize this unique window of opportunity to transform how we manage water. Together, we can support healthy ecosystems, vibrant economies, and sustainable water systems that are balanced and resilient.

# I. Introduction: the need and opportunity in water

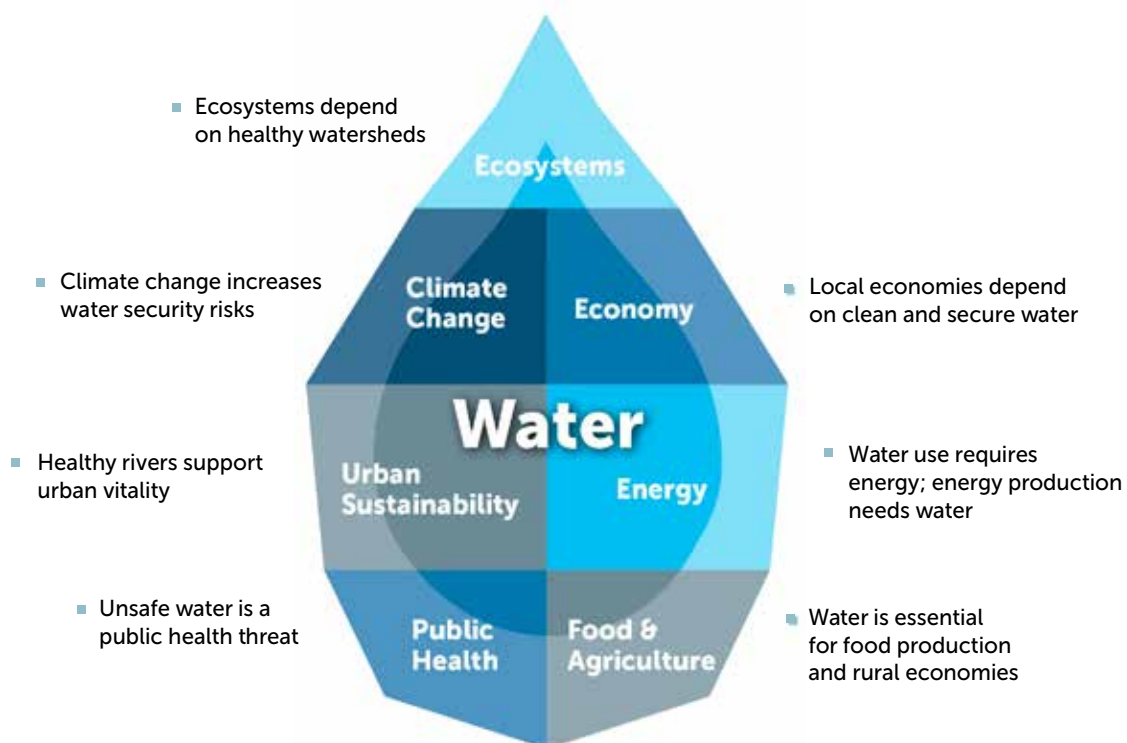
## A watershed moment for philanthropy

Water is the essence of life and vital to every person, economy, and ecosystem on the planet. But around the globe, freshwater resources are being stretched beyond their limits, leading the World Economic Forum in 2015 to list water crises as “the biggest threat facing the planet over the next decade.” From Australia to Yemen, acute water shortages have struck at the heart of national economies. Globally, nearly one billion people lack access to improved drinking water supplies, according to the World Health Organization.

The United States confronts its own mounting water challenges. At least 40 states will face some type of regional water shortage in the next 10 years, according to the U.S. Government Accountability Office. Nowhere in the nation is the situation more worrisome than in the American West, where major rivers such as the Colorado are severely over-allocated. In California and Texas, epic droughts have revealed the vulnerability of municipal supplies, inflicted deep damage on agriculture, and depleted groundwater aquifers. More than 80% of the West’s original riparian habitat is gone, as are many endemic fish species. Critical rivers and coastal estuaries that depend on freshwater inflows are also unraveling as human water use is increasing.

The drivers of water stress are intensifying. Population growth is adding new demands. Climate change is exacerbating both droughts and flooding, thinning the snowpack, and increasing temperatures, which can lead to more evaporation from reservoirs and higher water demand. Some sources of freshwater are unavailable for human use due to past or continuing pollution. Because water is intertwined with so many social, economic, and environmental issues, tackling the world’s water challenges will be essential for making progress in health, energy, urbanization, and the food supply (Figure 1).

Figure 1: **Water is integral to social, economic, and environmental issues**





We have the knowledge and most of the tools needed to make progress on the problems that plague our freshwater systems—and there is an essential role for philanthropy to play in advancing these solutions. In California, for example, strategic philanthropic investments helped break decades of political gridlock and supported passage of historic groundwater reforms. In the Colorado River Delta, intensive work by foundations and NGOs led to an unprecedented binational agreement to rejuvenate the declining ecosystem with restoration flows. In Texas, a collaborative effort among NGOs and foundations has elevated the profile of water conservation and initiated a precedent-setting process to define environmental water needs for rivers and bays.

Philanthropy can—and must—play a more pivotal role in addressing 21st century water challenges. Effective, strategic, and collaborative grantmaking already has made a difference by advancing critical policy reforms and new water management practices. But with external pressures only mounting, the field must rapidly scale up this progress and take advantage of opportunities to transform our relationship with water.

Recognizing the urgent need to solve water problems at scale, a group of foundations launched the Water Funder Initiative. WFI is a collaborative effort to identify and activate promising water solutions through strategic philanthropic investments in the United States, starting in the West, where scarcity and reliability of clean water are urgent issues.

WFI is supported and guided by the S. D. Bechtel, Jr. Foundation, Energy Foundation, the William and Flora Hewlett Foundation, the Cynthia and George Mitchell Foundation, the David and Lucile Packard Foundation, Pisces Foundation, The Rockefeller Foundation, Walton Family Foundation, and Water Foundation. WFI is led by Susan Bell, Principal of Susan Bell & Associates and former Vice President of the William and Flora Hewlett Foundation. A small team with diverse expertise is executing the project, working in partnership with a Steering Committee of foundation representatives.

WFI is a project of these funders, and the focus of this 15-month effort has been to:

- 1) **Identify priority strategies for water-related philanthropy.**
- 2) **Engage funders and support coordinated action on priority strategies.**
- 3) **Increase support for priority strategies over time.**

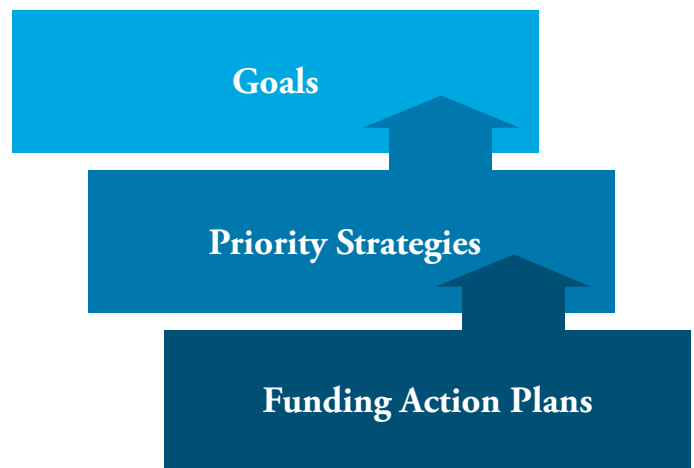
## Guide to document

In Section II, we describe the **goals** for philanthropy's engagement in water issues and outline an approach focused on key geographies, starting in the American West.

In Section III, we summarize six **priority strategies**, including potential roles and near-term opportunities for philanthropy.

Section IV summarizes **funding action plans**, which describe near-term opportunities where philanthropic investment can advance the priority strategies.

Section V describes **approaches for funders** to work together to increase both the magnitude and effectiveness of water-related grantmaking so that philanthropy can help shift water systems toward sustainable management.



## II. Vision, goals, and strategic approach

### Balance and resilience: two long-term goals for water sustainability

The American West, where WFI has focused its efforts thus far, is a complex, diverse landscape that ranges from deserts to rainforests and defies any simple definition, but much of the region faces inherent water challenges due to its aridity and highly variable precipitation.

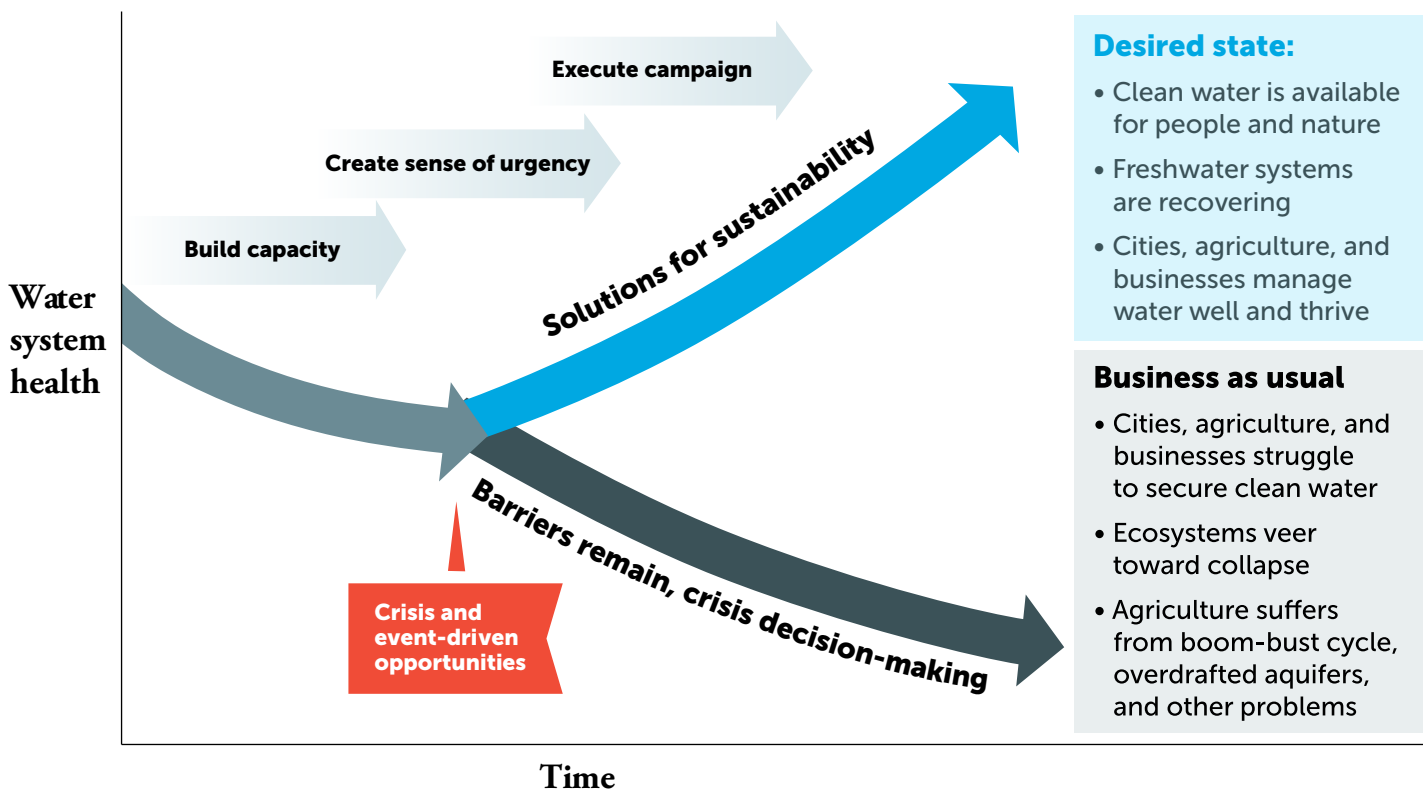
California confronts both an acute crisis from the drought and the chronic challenge of sustainably meeting the water demands of nearly 40 million residents and a \$54 billion agricultural economy. The Colorado River supplies water for about 40 million people and irrigates over 4 million acres of land. It is already over-allocated, and scientists project that climate change will further reduce the river's flow due to rising temperatures and a shrinking snowpack. Texas has whipsawed between severe drought and deadly flooding in recent years as the state contends with a changing climate and a population expected to double from 25 million to 50 million by 2060.

Policymakers, water managers, industry executives, NGO leaders, tribes, and others are seeking new ways to sustainably meet the water needs of cities, farms, energy providers, rural residents, and ecosystems.

WFI's vision is to employ powerful, coordinated philanthropic action to shift the trajectory of our water systems from continued degradation toward a sustainable future in which (Figure 2):

- Clean water supplies are available for people and nature.
- Freshwater ecosystems are recovering.
- Cities, agriculture, rural communities, and industry continue to thrive by proactively managing the water supply risks that accompany population growth and a changing climate.

Figure 2: **Sustainable solutions change the trajectory**



To realize this vision, we must achieve two primary goals:

- 1) **Bring basins into balance for people and nature.** We must use existing supplies more carefully so that, over the long term, we use no more water than is available and our supplies can support vibrant ecosystems, communities, and economies.
- 2) **Strengthen resilience of water systems in a 21st century climate.** Extremes are becoming the norm as the planet warms, and many of climate change's impacts will manifest through the hydrologic cycle. We need water management systems that are flexible and resilient enough to cope with times of water stress and mitigate risks to water users.

Although WFI is focusing first on the American West, many of the approaches may be applicable elsewhere in the world, and lessons from other regions can help solve the water problems confronting the West.

## Windows of opportunities for near-term change

Over the past year, WFI has been gathering the most promising ideas from across the American West—and from a broad spectrum of stakeholders, including NGO experts, policymakers, funders, scientists, farmers, tribal leaders, attorneys, water utility executives, and others. More than 140 people have contributed through individual interviews and six WFI workshops in Arizona, California, Colorado, and Texas.

These consultations have highlighted critical windows of opportunity for reform. Extreme weather, growing water demands, and other stresses are creating greater urgency to reform arcane policies and practices. California's drought, for example, served as the backdrop to monumental changes in groundwater management. Dropping reservoir levels in Lake Mead, due to both over-use and prolonged drought, have opened doors to new interstate and international agreements. Faced with reduced supplies imported from Northern California and threats to the Colorado River's supply, Los Angeles and its neighbors are increasingly turning to conservation, reuse, and other strategies to reduce risk; similar changes are transpiring in Phoenix and Tucson. In Texas, a decade of searing drought prompted new state funding for water conservation and reuse while also illuminating weaknesses in the state's groundwater management framework.

Woven through these advances is an increasing recognition that our weather is becoming more extreme and dangerous. The exceptional droughts, floods, and higher temperatures of recent years are signs of the new normal. Going forward, we need fresh approaches not only to address today's immediate challenges but also to strengthen resilience for the future. Accordingly, this blueprint for philanthropy acknowledges the need to operate at several time scales. We describe near-term opportunities where philanthropy can play a catalytic role by focusing coordinated action and resources where the urgency and political will for action are currently greatest due to droughts, floods, and other risks to water users. We also position these short-term investments within sustained programs that build toward the more ambitious and long-term goals of achieving balance and resilience in a 21st century climate.

## Integrating sectors: urban, agriculture, environment, and energy

The West's water use is traditionally divided into three main sectors: urban, agriculture, and environment. A fourth sector—energy—is also closely tied to water because thermoelectric power plants need large volumes of water; hydropower dams are a key source of renewable energy; and huge amounts of electricity are needed to clean, deliver, and heat water. The priority strategies in this blueprint seek to integrate the four sectors and ensure that water management meets multiple objectives for people, economies, and ecosystems. Sustainable management will require improvements within these four sectors. Allowing water to flow more easily among the sectors will improve the balance, resiliency, and health of the overall system. Some of the challenges and opportunities for water management in each sector are highlighted below:



**Urban:** Cities and industry depend on reliable water supplies and face major economic and social risks from water disruptions. We already know how to improve urban efficiency and there are many success stories, but the adoption of these practices and policies is highly variable. Urban water-saving measures, along with wastewater reuse and better stormwater management, can reduce the need to import costly water from distant rivers or aquifers. Beyond increasing efficiency, cities can employ a full suite of approaches to reduce risks, including better pricing structures and flexible water agreements with agriculture. Improvements are also needed to ensure the specific needs of low-income residents and small communities are met.



**Agriculture:** The farming sector is the West's biggest water user, and many rural economies rely heavily on irrigated agriculture. Improving irrigation efficiency can sometimes help agriculture more effectively manage its water while also improving crop yields and water quality. Other approaches to managing agricultural water needs include using markets or other incentives to affect crop choice, irrigation rates, and other decisions. Modernizing how we manage water storage, changing the timing of water deliveries, and pursuing other integrated approaches are also promising opportunities for meeting agricultural water needs without harming the environment.



**Environment:** Much of the West's water development occurred without full recognition or appreciation of the water needs of ecosystems. Over the last few decades, there has been progress in using market mechanisms to secure water for rivers. Researchers have also made major strides in determining the water needs of various ecosystems. Nevertheless, there are still opportunities to better integrate ecosystem restoration and floodplain management into comprehensive water strategies to help reduce conflicts and add flexibility. Proactively building nature's needs into our highly managed water systems, alongside the needs of cities and farms, is crucial for strengthening the resilience of our freshwater systems.



**Energy:** Sustainable water solutions are tied to energy, as energy and water are closely linked. Power plants account for about 40% of all U.S. water diversions. In California, one-fifth of the state's electricity and one-third of its non-electricity natural gas go toward treating, supplying, and heating water. Some water agencies derive a large share of their income from hydropower sales; for other water providers, energy costs dramatically affect their bottom line. The energy-water nexus will be a critical arena for many sustainable water solutions, and the energy sector's experience with markets, incentives, and other tools may provide helpful models for sustainable water management.

Some of the most promising approaches to achieving balance and resilience hinge on better leveraging the interdependence among these sectors. For instance, agricultural lands provide important sites for groundwater recharge, which can improve dry-season flows for habitat and drought supplies for cities. Healthy riparian areas can safely absorb impacts of flooding, thereby protecting farms and cities from damage.

While the urban, agricultural, environmental, and energy sectors are the largest water users, rural communities also need safe, reliable, and affordable water supplies. As solutions are developed to achieve balance and resilience across the major sectors, site-specific attention is needed to ensure that rural users, including tribes, have dependable access to healthy water.

### III. Priority strategies for philanthropy

WFI has identified six priority strategies for advancing water sustainability (see table below for summaries). These strategies emerged from WFI's network of experts and advisors based on each strategy's urgency, potential impact, and suitability for philanthropic influence. While the strategies do not encompass every intervention related to water that funders could support, input from WFI's network has yielded broad agreement that making progress in these areas is essential for addressing 21st century water challenges. These strategies will play out in the urban, agricultural, environmental, and energy sectors, improving water management in each sector and strengthening integration across the sectors.

Priority Strategy	Objective	Desired Outcomes
<b>Shape healthy water markets</b>	Meet changing needs, reduce over-allocation, and embed social equity and environmental considerations into equitable and transparent markets.	<ul style="list-style-type: none"> <li>• Water use and storage respond quickly to changing circumstances and climate variability, thereby increasing resilience</li> <li>• Supply/demand imbalances are reduced as markets encourage water-saving measures</li> <li>• Rivers, fish and wildlife, and disadvantaged communities benefit from transactions</li> </ul>
<b>Develop new funding sources</b>	Expand and diversify funding for sustainable water management and infrastructure, including by properly valuing water.	<ul style="list-style-type: none"> <li>• Irrigated agriculture is vibrant, productive, and sustainable</li> <li>• Water supply infrastructure is modernized and properly maintained</li> <li>• Increased funding is available to restore and maintain ecosystems, provide safe water for disadvantaged communities, and protect source watersheds, thereby increasing resilience</li> <li>• Increased private capital is invested in sustainable water management practices and projects</li> <li>• Public funding sources are diversified and stable</li> </ul>
<b>Improve water governance</b>	Promote governance structures that reduce over-allocation, protect environmental values, support disadvantaged communities, and respond to climate variability.	<ul style="list-style-type: none"> <li>• Management entities increasingly cooperate to advance integrated, holistic, and watershed approaches</li> <li>• Management decisions are transparent and equitable</li> <li>• Management adapts to climate variability</li> <li>• Proactive management achieves supply/demand balance and increases resilience</li> </ul>
<b>Drive decisions with data</b>	Accelerate the development of open data and information systems to support sustainable management.	<ul style="list-style-type: none"> <li>• Data on water supply, use, and trends are vastly improved and more transparent</li> <li>• New technologies to collect and analyze data are deployed at scale in key locations</li> <li>• Better information and predictive models are used to manage variability and support healthy markets</li> <li>• Basin-scale water balances are tracked and reported</li> <li>• Metrics for system resilience are identified and tracked</li> </ul>

Priority Strategy	Objective	Desired Outcomes
<b>Strengthen communications and build political will</b>	Improve the field's strategic communications capacity and build the political will, constituencies, and leadership needed to support water management reforms.	<ul style="list-style-type: none"> <li>• Leading decision-makers, water managers, and water users support critical reforms</li> <li>• Widespread public support for reforms motivates and supports corrective actions</li> <li>• Risks to communities, nature, and economies due to over-allocation and a changing climate are widely recognized</li> </ul>
<b>Accelerate innovation</b>	Accelerate development and deployment of innovative technologies and practices to advance goals in the urban, agricultural, environmental, and energy sectors.	<ul style="list-style-type: none"> <li>• Best practices that contribute to water balance and resilience move quickly from the demonstration stage to mainstream adoption</li> <li>• Strong markets for low-water-use technologies and practices are in place</li> <li>• Farms, wildlife, cities, and other water users, including rural communities, benefit from new technologies and practices</li> </ul>

Each priority strategy is required to achieve WFI's goals, and the strategies are mutually dependent. Shaping healthy markets advances a powerful tool for bringing water demands in line with supplies and also allocates water resources in a more flexible and equitable manner. Developing new funding sources builds the necessary financial resources for the full spectrum of management practices, technologies, and infrastructure needed to achieve and maintain balance and resilience. Improving water governance aligns oversight and management institutions with the new requirements and priorities that come with sustainable management. Driving decisions with data is a fundamental precondition for effectively designing, informing, and implementing efforts to bring basins into balance and increase resilience. Strengthening communications and building political will undergirds all efforts, as a compelling case for change and broad-based support are needed to advance meaningful—and durable—solutions. Accelerating innovations positions water users to thrive in balanced basins with constrained supplies.

## Shape healthy water markets

**Objective: Meet changing needs, reduce over-allocation, and embed social equity and environmental considerations into equitable and transparent markets.**

Coping with more extreme weather and rapidly changing economies demands more flexible, adaptive water management. As needs and priorities change, we need efficient and effective systems that can easily shift water to different uses. These mechanisms are often described as “water markets,” but they include a range of tools and transactions, including voluntary water trades, forbearance agreements, water banking systems, and other instruments.

In the West, water law, institutions, and the structure of existing water rights can present major obstacles to beneficial transactions and banking, either by impeding trades altogether or by increasing transaction costs. Due to these obstacles, the West has a mixed record with water trading. High transaction costs mean wealthy water users can disproportionately benefit from trades, while a lack of transparency can cause suspicion among stakeholders and erode support for trading. Across the West, public and private dollars have been committed to environmental water transactions. But a lack of navigable procedures, supportive institutions, and solid information have impeded the widespread use of trading to meet environmental and other needs.

When properly constructed, water markets can be powerful change agents. They offer the chance to embed equity and environmental objectives into water management, reduce long-term supply/demand imbalances, and adapt to changes in climate and water demands. But simply establishing or encouraging markets is not sufficient and could actually be counterproductive. Without appropriate controls, transactions could have unintended adverse impacts on the environment, rural economies, and marginalized stakeholders. Avoiding these adverse consequences for disadvantaged communities and vulnerable ecosystems requires transparent processes, and ensuring the fair treatment of affected interests must be a central focus of shaping healthy water markets.

### Roles for philanthropy

In many places throughout the West, active markets do not yet exist and thus can be designed from the outset to be flexible, transparent, and effective. In other places, existing markets need to be improved. Philanthropy can help demonstrate the value of beneficial transactions and highlight needed reforms. In addition, funders can support advocacy for healthy trading systems and strong institutions to manage them. A key role for philanthropy is to ensure that enhanced markets and trading serve the needs of disadvantaged communities and the environment.

### Examples of near-term opportunities

- Support policy reform in California and Colorado to increase regulatory flexibility for transactions while protecting against negative impacts to communities and the environment.
- Expand banking of surface water and groundwater by piloting market mechanisms and supporting water banking efforts in the Upper Colorado River Basin.
- Support development and testing of voluntary water sharing systems.
- Advance environmental flow transactions through market approaches that allocate cooling water from decommissioned coal plants to environmental and other water needs, and by shaping how public funding affects environmental flows in Texas and California.
- Seed the creation of community water trusts to facilitate and engage in water transactions that produce benefits such as environmental flows, lower risks for water users, and new revenue streams for farms and ranches.



## Develop new funding sources

**Objective: Expand and diversify funding for sustainable water management and infrastructure, including by properly valuing water.**

Sustainable water management isn't free, and someone has to pay for it. Maintaining facilities, improving operations, collecting data, communicating metrics, financing water transactions, and planning for the future all are essential for sound water management—and all are chronically underfunded. Most water users only pay the direct costs of water provision—not for broader measures that ensure a safe and secure supply over time. Developing water-related funding is about more than fixing aging infrastructure. It is also about funding all of the things that are necessary for a sustainable water future in a 21st century climate, including protecting source watersheds and supporting agricultural water-savings.

Traditional funding sources, such as federal and state programs for infrastructure and environmental restoration, are disappearing; what's left often suffers from highly erratic funding levels. In some areas, state-issued bonds have funded important infrastructure and restoration projects. But these funds are notoriously unreliable and do not support the long-term, routine investment that is needed for sustainable management. Eventually, water users and those who benefit from water resources should pay most of these costs.

### Roles for philanthropy

Philanthropy should not pay for the cost of water management itself, but it can help ensure that a combination of public and private funding streams support the full range of activities, infrastructure, and protections needed to maintain healthy and resilient water systems. Funders and grantees can help build public and political will to expand funding for water by raising awareness of the fundamental role that water systems play in our nation's infrastructure and by broadening ratepayer understanding of water's costs and values. Philanthropy can support efforts to ensure that funding programs and fee structures are equitable and that disadvantaged communities can afford their basic water needs.

To leverage increased public funding for water management, philanthropy can support new models and targeted research that inform government funding policies, regulations, and allocations.

Philanthropy can work to better direct existing funding sources at the federal, state, and local levels, such as federal Title XVI reclamation and reuse funds, and pursue opportunities to condition these funding sources on water management improvements. Funders can also support efforts to test and demonstrate new approaches.

### Examples of near-term opportunities

- Build capacity of new “deal shops” and water trusts to find, structure, and finance model private impact investment deals that benefit the environment.
- Advance efforts to establish a water fee to fund unmet infrastructure and management needs, affordable basic supplies for disadvantaged communities, and enhanced drought resilience in California.
- Support elected water officials and municipalities as they access innovative financing mechanisms and implement rate structures that incentivize conservation while maintaining adequate revenue.
- Evaluate opportunities to reform municipal and green bond financing rules and rating systems to steer capital toward more sustainable water projects.

## Improve water governance

**Objective: Promote governance structures that reduce over-allocation, protect environmental values, support disadvantaged communities, and respond to climate variability.**

Oversight and management of water in the West are fragmented across many utilities, districts, and agencies with overlapping, piecemeal, or uncoordinated management. This fragmentation often leads to inefficient and contradictory decision making, and it can obscure the transparency needed for accountability. Moreover, water institutions are typically incentivized to focus on a narrow set of local outcomes, making it difficult to advance broader societal goals. Consequently, environmental water objectives are often unaddressed until habitats are nearly gone or endangered species regulations force desperate responses. Other weaknesses include management disconnects between surface water, groundwater, and land use. Poor enforcement or implementation of existing laws and policies is another deficiency.

There is no one formula for improving water governance: it requires regional specialization to account for local conditions, state laws, existing institutions, and established agreements. Strengthening governance may require revising underlying laws or policies and reforming entrenched institutions. Work-arounds, such as voluntary collaborations or financial contracts, may also be needed to bypass intractable bureaucracies. Accordingly, advancing effective governance requires both near-term actions and longer-term efforts to establish durable structures.

### Roles for philanthropy

Coordinated and effective philanthropy is needed to generate salient research to inform decision making and support targeted campaigns that can build the political will to advance and implement governance reforms. In places where solid policies are already in place but not adequately enforced, funders can support efforts to illuminate shortcomings, encourage stronger implementation, and make local leaders more accountable to the communities they serve.

Philanthropy can also support performance standards that highlight water imbalances, improve water efficiency, and increase public awareness of water issues. Where historic approaches to meeting environmental needs have faltered, philanthropy can support science-based, multi-stakeholder processes to establish ecosystem needs and shape new governance approaches that integrate human and environmental uses.

Philanthropy can convene stakeholders, decision-makers, and local leaders to find common ground, build consensus for change, transfer knowledge across regional efforts, and help develop overarching standards and guidelines. Funders can also support visionary leaders and spokespeople who are leading reform efforts and articulating the need for reform to important constituencies. Working with social equity, tribal leaders, and environmental groups, philanthropy can help ensure that governance reforms do not neglect the interests of disadvantaged communities or the environment.

### Examples of near-term opportunities

- Implement performance standards or ratings to highlight solutions to water imbalances, clarify data needs, and increase public awareness.
- Support and highlight the efforts of visionary leaders by fostering a network of local and regional water managers, supporting leadership development in the water sector, and incentivizing coordination among agencies.
- Support effective implementation of California's new groundwater laws as well as exploration of promising ways to better manage groundwater in Texas and Arizona.
- Advance negotiations to provide restoration flows in key habitats, such as the Colorado River Delta, and expand innovative agreements, such as the Colorado River System Conservation Program.

## Drive decisions with data

**Objective: Accelerate the development of open data and information systems to support sustainable management.**

Critical obstacles to sustainable water management include the lack of accessible water data and tools that support timely and science-based decision making, as well as an informed and supportive public. In many places, we simply do not know who is taking water, where and when they are using it, or for what purposes.

New data technologies have transformed other disciplines, but these analysis and visualization tools, which are critical for water markets and precision management, are still not widely applied in the water world. Decision-makers need accurate, timely data to understand current conditions, identify sustainability problems, illuminate possible solutions, track progress, and adapt along the way. Stakeholders need easy-to-understand metrics of water conditions so they can make sure managers and policymakers protect the environment and the public's water supplies.

The water field also needs to do a better job of analyzing existing information and communicating trends in order to resolve complex issues and justify changes in direction or large expenditures. Philanthropic efforts to drive decisions with more and better data will increase the sense of urgency for change. At the same time, the efforts will build capacity to make water management decisions more efficient, effective, timely, and inclusive.

### Roles for philanthropy

Philanthropy has a unique role to play in elevating water data as an issue of concern. For example, funders can help promote a vision for open, accessible data and advance standards that ensure water information is available to empower citizens, agencies, NGOs, and others to make better decisions. Philanthropy can also encourage the adoption of promising technologies, such as satellite-based monitoring of water use, and mobilize citizen science to address some of the West's greatest water data needs.

Philanthropy can broker and catalyze relationships between sectors, including government and businesses, to advance innovations and spur additional investments in water data. Funders can also help to build bridges between researchers and practitioners to gain a practical view of data challenges and work collaboratively to solve critical problems.

### Examples of near-term opportunities

- Develop a shared vision for—and communicate the importance of—open and transparent water information systems.
- Support efforts to increase and optimize the funding available for data and information systems.
- Support the development of a water data inventory—including standards used, frequency of collection, quality, and accessibility—and fund targeted research and citizen science to help fill the most significant data gaps, such as consumptive water use, water quality issues, and environmental data.
- Support user-centered projects that home in on specific water challenges where data can be transformative for key users, such as urban water managers, agricultural water districts, conservation interests, and environmental justice advocates.
- Encourage transparent data systems that support water markets by making data on water rights, water use, and environmental conditions more reliable and accessible.
- Support modeling to show how changing reservoir operations can extend supplies and provide environmental flows.

## Strengthen communications and build political will

**Objective:** Improve the field's strategic communications capacity and build the political will and constituencies needed to support water management reforms.

Making our water use more sustainable hinges on effectively communicating solutions to pressing problems and building the political will for needed changes. On issues ranging from health care to climate change, funders and grantees have shown they can increase the demand for change among a broad set of constituencies by helping to develop and deploy effective communications strategies.

Everyone has a fundamental interest in clean, reliable water, yet the discussions surrounding water policies and practices are typically dominated by insiders. Key stakeholders are often missing from the discussion and water's political, economic, scientific, and engineering complexities can make the material dry and inaccessible. Moreover, water issues are typically ignored except during times of drought or severe flooding, when the options for implementing sustainable solutions have narrowed.

### Roles for philanthropy

Strengthening communications and building political will are threaded through all of the priority strategies, and all of the funding action plans will detail how philanthropy can support coalition-building, strong outreach, and effective communications to advance their specific objectives.

Drawing on successes in other fields, philanthropy can help raise awareness of water issues, expose problems, engage citizens, support leaders, and advance support for solutions. Philanthropy can connect with and strengthen the voices of new, underrepresented, and disadvantaged constituencies to advocate for sustainable management while explaining water's connections to health, food, and other compelling issues. Support for applied research in the social and behavioral sciences can shed new light on how and why people use water, thereby informing effective water policy, management, and communications.

### Examples of near-term opportunities

- Improve public and policymaker understanding of water problems and solutions by supporting organizations that analyze and report objectively on water issues, including by using new information-sharing and visualization technologies.
- Analyze the current state of public opinion and personal values connected to water in order to develop more effective messages and messengers.
- Design and implement a news aggregation initiative to raise the level of discourse, help frame the water narrative, and advance sustainable solutions.
- Explore supporting other activities, such as convening a high-profile commission to elevate water issues and increasing engagement with funders working in other sectors connected to water.

## Accelerate innovation

**Objective:** Accelerate the development and deployment of innovative technologies and practices to advance goals in the agricultural, urban, environmental, and energy sectors.

New technologies and practices can accelerate transformative changes in water management. Recent innovations, such as the WaterSmart technology that tracks and reports urban water use, can reinforce the efforts of water users and water managers. Accelerating advances in stormwater management and green infrastructure can help cities become more self-reliant, thereby reducing the pressure to build costly and environmentally damaging dams and diversions. For environmental water needs, new low-cost stream gauges offer the potential to rapidly report critical details on local water conditions so that managers can target their strategies to benefit fish and wildlife. Improved information systems and forecasting can help insulate our water systems against extreme weather events.

Other innovations do not involve new technology but instead take new approaches using existing tools. An emerging example from agriculture is deficit irrigation, which can support profitable crop yields while using less water, thereby improving agriculture's flexibility in the face of more variable water supplies. Some of the most exciting innovations are new practices that integrate urban, environmental, and agricultural water uses. For example, deliberately flooding farmland during wet periods can provide habitat for migratory birds while at the same time recharging groundwater to improve dry-year water supplies for both farms and cities.

### Roles for philanthropy

Philanthropy can play an important role in testing and refining new technologies and strategies by supporting pioneering research and development, then helping practitioners overcome obstacles that impede the rapid implementation of the best ideas. Funders can also help build and strengthen networks of practitioners and developers to scale up deployment of innovations and transfer them to other locations. By supporting innovators and helping to expand the pipeline of new water ideas—whether they originate from businesses, universities, or elsewhere—philanthropy can accelerate the adoption of transformative practices and reduce the risks of any undesirable consequences.


































### Examples of near-term opportunities

- Partner with other private and public sector efforts to identify the most innovative ideas related to water and facilitate their adoption.
- Advance urban water conservation technologies by testing solutions, such as new water measurement tools.
- Support testing to quantify the water savings and crop productivity of planned deficit irrigation and other non-fallowing approaches to reducing agricultural water use.
- Support testing of flood irrigation of agricultural lands for groundwater recharge and bird habitat, and support implementation and evaluation of rangeland management practices to increase recharge.
- Advance development and implementation of low-cost stream gauging technologies.
- Support the use of crowd-sourced information and citizen science to advance water sustainability.
- Support development of low-cost treatment technologies that can be affordably implemented by small water systems.

## IV. Funding action plans

To ramp up implementation of the priority strategies and advance sustainable water management, coordinated philanthropic action is urgently needed. WFI is working with funders, grantees, and other partners to develop detailed funding action plans for philanthropy to advance the priority strategies in the near term while laying the groundwork for longer-term systemic change (Figure 3).

Figure 3: **Funding action plans and priority strategies**

		Priority Strategies					 PRIMARY FOCUS	 SECONDARY FOCUS
		Shape Healthy Water Markets	Develop New Funding Sources	Improve Water Governance	Drive Decisions With Data	Strengthen Communications and Build Political Will	Accelerate Innovation	
Funding Action Plans	California Drought							
	Lower Colorado River Basin							
	Data							
	Impact Investment							
	Communications and Political Will*							
	Water Markets*							

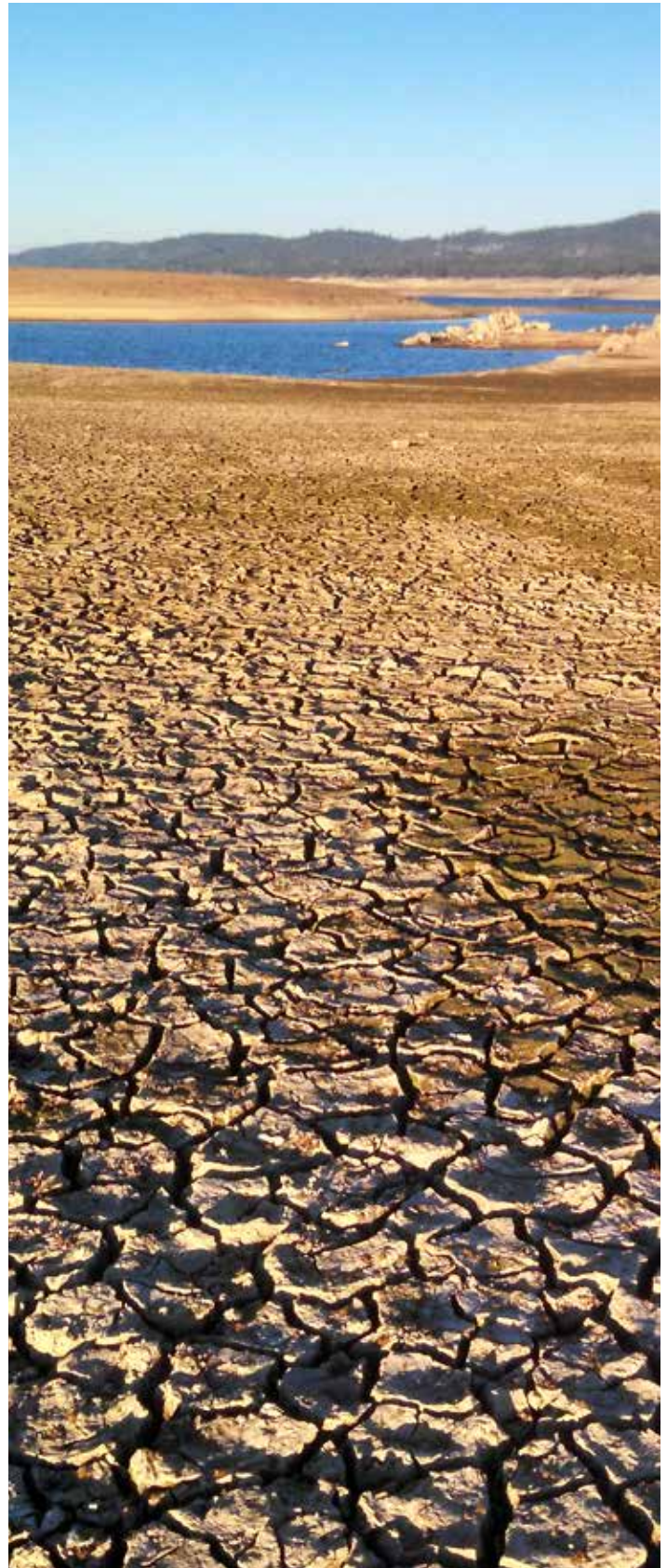
\*Being developed

The set of actions in the plans vary according to the strategy, current circumstances, and geography. In some cases, such as data and communications, the plans describe Westwide opportunities to strengthen tools or approaches. By contrast, the regionally focused action plans addressing the California drought and Lower Colorado River Basin help advance multiple priority strategies in a specific place and are tailored to suit regional conditions.

Additional plans—and campaigns and funding opportunities within the plans—will be developed based on the field’s needs, funder interests, opportunities to make progress, and other factors.

In selecting funding action plans, WFI is considering the following criteria:

- **Alignment with priority strategies:** Activities that clearly advance the priority strategies, either Westwide, across a region, or in a location that can export its lessons learned to other places.
- **Timeliness or need:** Opportunities that are ripe or essential for advancing priority strategies.
- **Overall potential for impact:** Activities or approaches that show potential for dramatically improved water management.
- **Scale or transferability:** Solutions that operate at scale, scale easily, or offer easily transferable lessons.
- **Relevance to philanthropic influence:** Approaches that play to philanthropy's strengths and emphasize methods that can be implemented through NGOs, educational campaigns, research, or pilots.
- **Innovative approaches:** Approaches that include innovative roles for funders willing to experiment, take risks, and learn from their efforts.
- **Funder interest:** Actions that have considerable support among funders who can effectively resource them.



The table below summarizes the funding action plans that are in various stages of development and how each relates to the priority strategies. Below the table is a brief description of each funding action plan.

<b>Funding Action Plan</b>	<b>Description</b>	<b>Priority Strategies Addressed</b>
<b>California Drought</b>	Leverages high level of political will in the context of California's drought to increase funding for water management, build healthy water markets, and improve regional self-reliance.	<ul style="list-style-type: none"> <li>• Shape healthy markets</li> <li>• Develop new funding sources</li> <li>• Advance integrated governance</li> <li>• Strengthen communications</li> <li>• Drive decisions with data</li> </ul>
<b>Lower Colorado River Basin</b>	Focuses on a set of near-term efforts in the Lower Basin, such as a binational agreement, that will both address the current imbalance and set the groundwork for additional innovative reforms of basin-wide management and governance.	<ul style="list-style-type: none"> <li>• Advance integrated governance</li> <li>• Shape healthy markets</li> <li>• Develop new funding sources</li> <li>• Strengthen communications</li> </ul>
<b>Data</b>	Identifies near-term opportunities for improving and integrating water data and scaling up the use of innovative technologies to gather, analyze, and communicate data. Includes early work to build support for data standards.	<ul style="list-style-type: none"> <li>• Drive decisions with data</li> <li>• Supports all other strategies</li> </ul>
<b>Impact Investment</b>	Describes approaches to increase private investment in sustainable water management solutions. Identifies how philanthropy and NGOs can work with impact investors to implement innovative financing approaches.	<ul style="list-style-type: none"> <li>• Develop new funding sources</li> <li>• Advance integrated governance</li> <li>• Shape healthy markets</li> </ul>
<b>Communications and Political Will*</b>	Will identify near-term opportunities, such as expanded water journalism, to improve the field's communications capacity, build political will, and cultivate diverse constituencies needed to support water reforms.	<ul style="list-style-type: none"> <li>• Strengthen communications</li> <li>• Supports all other strategies</li> </ul>
<b>Water Markets*</b>	Will establish priority, near-term steps to encourage water transactions and ensure transactions are transparent, equitable, and beneficial for the environment.	<ul style="list-style-type: none"> <li>• Shape healthy markets</li> <li>• Develop new funding sources</li> <li>• Advance integrated governance</li> <li>• Drive decisions with data</li> </ul>

\*Being developed.



## California Drought Funding Action Plan

A historic drought and the attendant media coverage have created a unique opportunity for the Water Foundation to take swift and bold action on multiple fronts to transform California's water policies. This funding action plan outlines an approach to resolving water management challenges during the remaining three years of the Brown Administration. The Governor and key opinion leaders have identified solutions in the state's Water Action Plan, and the Water Foundation's approach builds from these common interests to create significant and durable policy reforms. The focus for the next three years is to:

- **Increase funding for sustainable water management solutions.** This effort includes reforming the state constitution so that local water agencies can more easily raise revenues for stormwater capture and flood control, implementing tiered pricing to encourage water conservation, and extending lifeline rates to low-income households that cannot afford to pay their water bills. This work will also advance efforts to establish a fee to help pay for unmet infrastructure and water management needs, including investments in drought resiliency.
- **Expand opportunities to support healthy water markets.** Work related to water markets includes improving the collection, integration, and availability of water and habitat data to support data visualization tools to expedite the review of voluntary water transfers. Additional work will advance reforms to encourage voluntary transfers within regions and facilitate instream flow dedications and environmental water transfers.
- **Improve regional self-reliance of local water supplies.** This work includes advancing conservation and water use efficiency targets within regions; advancing reforms to connect water supply availability to local land-use planning decisions, including requiring urban water management plans to incorporate climate change predictions in water supply analysis; and advancing safe drinking water solutions for disadvantaged communities that lack reliable water supplies.

The California drought plan includes efforts to change the public discourse on the state's water management system by engaging with diverse coalitions of thought leaders from the worlds of business, labor, agriculture, politics, and advocacy.

## Lower Colorado River Basin Funding Action Plan

Conditions are ripe in the Lower Colorado River Basin to advance the goals of balance and resilience at scale. The near-term window of opportunity in the Lower Colorado arises from several factors. A 15-year drought has forced major water users and decision-makers to acknowledge openly that business as usual is too risky and that collaborative solutions are urgently needed. Moreover, a confluence of deadlines in 2017 will drive action and can be leveraged to build political will for change. These and other conditions, including the ability to build on existing efforts by NGOs and funders, present an opportunity to develop and implement solutions that will benefit both significant environmental resources, such as wetland habitats at the Salton Sea and Colorado River Delta, and major economic interests, including cities, agriculture, tribes, and industry.

Seizing this moment, the funding action plan for the Lower Colorado River region is aimed at achieving several interrelated agreements to reduce annual over-allocation in a manner that protects and restores critical freshwater-dependent habitats, including:

- **Binational agreement.** Through flexible water management, this effort aims to provide flows for the continued restoration of the Colorado River Delta.
- **Salton Sea.** This work focuses on an agreement that addresses restoration needs in a manner that provides for flexible water management that responds to changing Colorado River conditions, as well as provides increased opportunity for geothermal development and agricultural diversification in the Imperial Irrigation District.
- **Central Arizona demand.** This work centers on an agreement to flexibly manage a portion of the Central Arizona Project's allocation to agriculture to help re-balance Lake Mead.

This funding action plan's goal is to secure agreements, based on cooperative action, to stabilize Lake Mead's surface elevation and lay the groundwork for sustainable water management over the long term. Approaches include targeted and well-designed voluntary water transactions; increased funding for proactive water management, including from private and government investment; informed and deliberate allocation of water for environmental needs; increased collaboration of urban, tribal, and agricultural water interests toward integrated solutions; and effective communication of the necessity and political feasibility of actions.

## Data Funding Action Plan

Information systems can transform water management, but inadequate technology, incomplete information, and insufficient political will to tackle these challenges have stymied progress. Data is not a top priority for many important actors, and water users often struggle to employ data. Philanthropy can play a pivotal role in lowering these barriers, especially when the moment is ripe to drive political change.

The funding action plan includes two types of investments. Enabling initiatives create the conditions required to scale data solutions across the West and target barriers to the effective use of water data. User-centered projects home in on substantive water challenges where data could be transformative for key users. Each user-centered project develops an integrated solution that meets the needs of specific data users—including urban water managers, agricultural water districts, environmental justice advocates, and conservation interests—and addresses the multiple barriers they face.

These two types of investments are mutually supportive. The enabling initiatives create the environment required to scale the solutions developed in the user-centered projects across a wider range of users and places. Meanwhile, user-centered projects create tangible advances and examples of success that can help to cultivate data champions in the water community.

The funding action plan focuses on the following efforts to ensure that data drives smart, sustainable water decisions:

- **Norms and standards support data-driven decision making.** This work will establish a vision for open and transparent water information systems in the West.
- **Technology and information inform water decisions.** This effort will improve technologies for analysis and visualization of water information.
- **User-centered projects meet challenges in water management.** These projects develop and test solutions that will meet the needs of specific users and help ensure that data improve decision making.

## Impact Investment Funding Action Plan

A key challenge for philanthropy is to help increase private investment in sustainable water management solutions. Traditional constraints on private investment in water management are changing rapidly, and there are now substantial opportunities within existing regulatory frameworks. Impact investing strategies can realign stakeholder interests toward sustainable management and achieve broader water management gains, such as mitigating water risk, reversing declines in watershed health, and reducing threats to both human water uses and the ecosystem services provided by natural systems. A recent report by Encourage Capital and Squire Patton Boggs, *Liquid Assets: Investing for Impact in the Colorado River Basin*, explored nine potential investment models for addressing a variety of complex water challenges in the Colorado River basin. These models and approaches include:

- **Agricultural crop conversion and rangeland investment.** This effort would deploy private capital to finance improvements in agricultural water use, resulting in water savings and modernized farming operations. These improvements could involve conversion to higher-value or lower-water-use crops, with water savings reallocated to other needs, including the environment. Another approach is to provide capital for ranches to convert to sustainable practices that could improve grassland conditions, benefit soil health, and improve livestock outputs.
- **Municipal green bonds with environmental conditions.** This approach includes providing investments for mid-sized municipalities with limited financing options to upgrade water delivery infrastructure, with the funding tied to implementation of more environmentally sustainable approaches.
- **Next generation community water trusts.** This approach uses community water trusts to facilitate water efficiency investments, water trading, and improved river flows. The model involves the use of private investment to develop a common pool of water entitlements, water savings, and/or changes in the use of diversion and storage infrastructure to address water supply risks while generating investment returns.
- **Forest health environmental impact bonds.** This model envisions the use of private capital to provide up-front investments for large-scale forest health improvements that can reduce wildfire risks and improve both the quantity and quality of water. The investments would be repaid through lower fire suppression costs and payments from downstream beneficiaries.

Identifying and developing these new model deals will take significant resources—including foundation program-related investments—particularly if they are to be structured in a way that will deliver the desired environmental, economic, and social outcomes, avoid undesirable side effects that can come from poorly planned private investments, and still attract the necessary private capital.

## **Communications and Political Will Funding Action Plan**

Philanthropy can play an important role in improving the water field's communications capacity and also help build the political will, constituencies, and leadership needed to support sustainable water management. Communications, coalition-building, and other efforts to generate political support for needed reforms are threaded through the other WFI strategies and funding action plans. In many cases, the necessary communications strategies and resources depend heavily on the local context or particular issues. The communications and political will funding action plan, which is being developed, focuses on broader, field-wide efforts to raise awareness of water problems, highlight sustainable solutions, hold institutions accountable, and build the political will needed to advance new policies and practices.

## **Water Markets Funding Action Plan**

The funding action plan for shaping healthy water markets will build a coordinated approach to better leverage current philanthropic investments and attract more funding to the field. Many water transaction programs already exist, and a number of well-developed efforts are already underway to expand and improve existing water transaction programs, as well as to test new transaction models. The water markets funding action plan, which is being developed, will focus on how different types of philanthropic investments can both accelerate and expand use of voluntary water transactions while ensuring they provide environmental benefits and minimize undesirable impacts, particularly for rural or disadvantaged communities.

## V. A collaborative approach for philanthropy

This blueprint summarizes how philanthropy can help advance sustainable water management at a scale never attempted in the water field. Funders of all types—from individual donors to community foundations to the largest philanthropies—must play a crucial role in addressing 21st century water challenges to ensure that cities, rural communities, farms, and wildlife all have access to the clean water they need to thrive in the face of a changing climate and a growing population.

By working to implement the set of funding action plans described above, water funders can:

- Advance meaningful progress toward sustainable water management in bellwether regions of the West.
- Demonstrate the promise of improved data systems, water markets, and impact investment.
- Build the water field’s capacity to communicate and increase support for water solutions.

The set of funding action plans defined here is a starting point for the more comprehensive, long-term philanthropic action needed to achieve the goals of balance and resilience. Following this model, water funders can build and implement these and other funding action plans to advance the full suite of priority strategies. By actively collaborating and aligning funding with the priority strategies over time, water funders have the potential to:

- Evaluate progress and better target investments.
- Align and amplify the work of funders and their partners and attract additional resources to the field.
- Scale up the solutions and reforms demonstrated through the funding action plans.
- Make measurable progress toward the goals of balance and resilience.

### Building the field

The field needs the capacity to implement the strategies and funding action plans described in this blueprint (Figure 4). We need capable, adequately resourced practitioners, experts, and champions to pursue advocacy campaigns, conduct research, represent stakeholders, communicate solutions, explore new ideas, accelerate innovation, and lead all of the actions that will ensure individuals and institutions make the right water management decisions, day in and day out. We also need to amplify the voices and expand the constituencies that advocate for solutions to our water challenges, marrying efforts to make our communities more sustainable with strategies to conserve biodiversity and other resources.

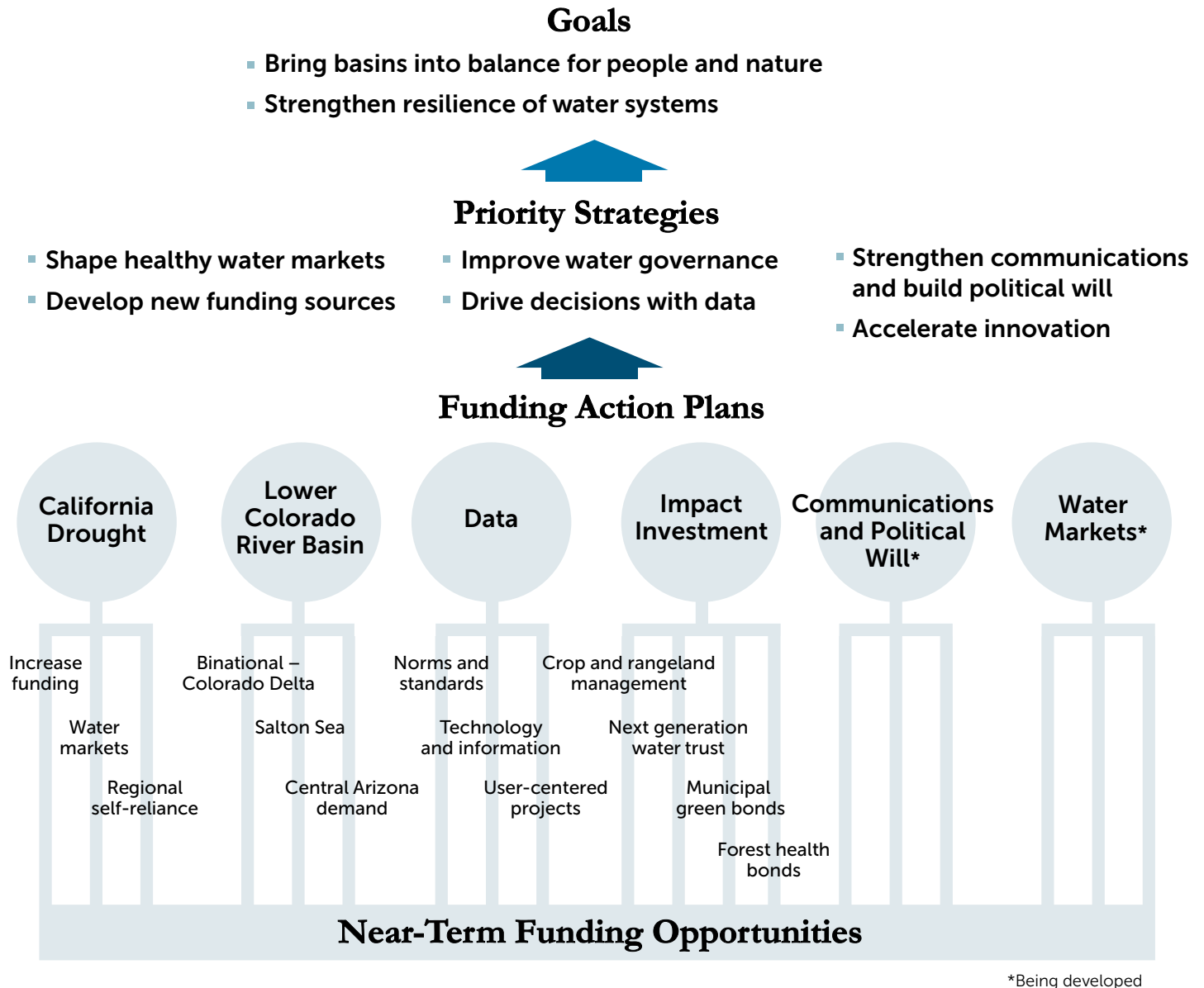
In some parts of the water field, organizations are already working together to implement funding action plans. In other areas, such as data and communications, additional capacity may be needed before considering new approaches, replicating approaches in multiple geographies, or taking local successes to regional or statewide levels. Water funders will need to work together to build capacity in and across organizations to carry out the priority strategies for philanthropy.

### Collaborative approaches

Inherent in the ambition and structure of this blueprint is the recognition that no single philanthropic entity can successfully advance sustainable water management, in the United States or the American West, at the scale needed to address the challenges we face.

To change entrenched systems and transform water management, funders and their grantees will need to partner effectively with each other, businesses, government, and other organizations. Several members of the Steering Committee are already engaged in highly collaborative approaches, such as pooling funds through the Water Foundation.

Figure 4: **Goals, priority strategies, and funding action plans**



Ultimately, greater coordination and collaboration in water philanthropy can result in expanded and more effective funding for scalable solutions to today’s water problems. Funders working together can deliver powerful messages to policymakers and industry, leverage public and private sector funding, and identify entry points for funders eager to engage. In other fields, ranging from climate change to public health, we have seen how funders can effectively work together to identify priorities, share lessons learned, fill gaps, and complement each other’s strategies. Water issues are ripe—indeed overdue—for philanthropic attention.

With population growth, climate change, and other pressures mounting, philanthropy must play an even more pivotal role in transforming how we manage water. Working together, funders can contribute to healthy ecosystems, vibrant economies, and sustainable water systems that are balanced and resilient.

# Appendix 1: Water Funder Initiative Steering Committee

The Steering Committee’s purpose is to play a guiding role at a pivotal moment in addressing 21st century water challenges. The committee guides WFI’s work as it accelerates progress toward more efficient and effective water systems for people and the environment.

The nine foundations on WFI’s Steering Committee are leaders in philanthropy who provide support and attract new resources for water and related fields. The Steering Committee’s primary responsibilities include supporting collaborative opportunities to accelerate progress on water, engaging other funders, and providing core financial support for WFI as needed. Representatives of the group—members of the Working Group—help to shape and serve as lead funders for priority strategies and funding action plans, involving partners beyond the Steering Committee to represent appropriate geographies and strategic interests.

The table below lists members of WFI’s Steering Committee and its Working Group during development of the blueprint. Members of the Working Group are indicated with an asterisk (\*).

Foundation	Steering Committee members
<b>S. D. Bechtel, Jr. Foundation</b>	Lauren B. Dachs, President Allison Harvey Turner, Program Director, Environment Program* Joya Banerjee, Senior Program Officer, Environment Program*
<b>Energy Foundation</b>	Eric Heitz, President Katie McCormack, Program Director, Western Region*
<b>The William and Flora Hewlett Foundation</b>	Larry Kramer, President Tom Steinbach, Program Director, Environment Program* Michael Scott, Program Officer, Environment Program*
<b>The Cynthia and George Mitchell Foundation</b>	Katherine Lorenz, President Marilyn Hastings, Vice President, Sustainability Program* Sarah Richards, Water Program Officer*
<b>The David and Lucile Packard Foundation</b>	Carol Larson, President and CEO Chris DeCardy, Vice President and Director of Programs* Walt Reid, Director, Conservation and Science Program* Curt Riffle, Program Officer, Western Conservation Program*
<b>Pisces Foundation</b>	David Beckman, President* Nancy Stoner, Water Program Director and Senior Fellow*
<b>The Rockefeller Foundation</b>	Judith Rodin, President Fred Boltz, Managing Director for Ecosystems*
<b>Walton Family Foundation</b>	Barry Gold, Director, Environment Program Margaret Bowman, Deputy Director, Environment Focus Area*
<b>Water Foundation</b>	Michael Mantell, President, Resources Legacy Fund Lester Snow, Executive Director* Andrew Fahlund, Deputy Director*

## Appendix 2: List of experts consulted

Through workshops and interviews, the Water Funder Initiative formally consulted close to 150 experts in water and related fields in 2015. We also sought input from many others on an informal basis.

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Contact</b>
<b>Abel Aronovitz</b>	Executive Director	V2 Capital, LLC	Interview
<b>Chris Austin</b>	Creator and Publisher	Maven's Notebook	Interview
<b>Carole Baker</b>	Executive Director	Texas Water Foundation	Workshop
<b>Joya Banerjee</b>	Senior Program Officer, Environment Program	The S. D. Bechtel, Jr. Foundation	Steering Committee
<b>David Beckman</b>	President	Pisces Foundation	Steering Committee
<b>Susan Bell</b>	Managing Director	Water Funder Initiative	Workshop
<b>Robert Berger</b>	Program Director, Arizona	Nina Mason Pulliam Charitable Trust	Workshop
<b>Ariane Bertrand</b>	Portfolio Manager, Food and Environment	Emerson Collective	Interview
<b>Jonathan Birdsong</b>	Director, Western Partnership Office	National Fish and Wildlife Foundation	Interview
<b>Jason Blau</b>	Associate Principal	Redstone Strategy Group	Workshop
<b>Phil Bobel</b>	Assistant Director of Public Works, Environmental Services Division Manager	City of Palo Alto	Workshop
<b>Giulio Boccaletti</b>	Global Managing Director, Water	The Nature Conservancy	Interview
<b>Fred Boltz</b>	Managing Director for Ecosystems	The Rockefeller Foundation	Steering Committee
<b>Charlton Bonham</b>	Director	California Department of Fish and Wildlife	Interview
<b>Ashley Boren</b>	Executive Director	Sustainable Conservation	Workshop
<b>Margaret Bowman</b>	Deputy Director, Environment Focus Area	The Walton Family Foundation	Steering Committee
<b>Alf Brandt</b>	Executive Director	Dividing the Waters Program, The National Judicial College	Interview
<b>Lynn Broaddus</b>	President	Broadview Collaborative, Inc.	Interview
<b>David Brotherton</b>	Founder and President	Brotherton Strategies	Interview
<b>Franny Canfield</b>	Knowledge and Program Director	Environmental Grantmakers Association	Interview



<b>Celeste Cantú</b>	General Manager	Santa Ana Watershed Project Authority	Workshop
<b>Allison Carney</b>	Community Manager	Council on Foundations	Interview
<b>Anne Castle</b>	Former Assistant Secretary for Water and Science	U.S. Department of the Interior	Workshop
<b>Joe Caves</b>	Principal and Founder	Conservation Strategies Group	Interview
<b>Jennifer Clary</b>	California Water Program Manager	Clean Water Fund	Interview
<b>John Cochrane</b>	Associate Director, Social Innovation	Council on Foundations	Interview
<b>Rick Cole</b>	Deputy Mayor	City of Los Angeles	Workshop
<b>Beth Conover</b>	Senior Program Officer	Gates Family Foundation	Interview
<b>Heather Cooley</b>	Water Program Director	Pacific Institute	Interview
<b>Peter Culp</b>	Attorney and Partner	Squire Patton Boggs	Interview
<b>Kevin Curtis</b>	Director of Strategic Partnerships, Climate Action Campaign	U.S. Climate Action Network	Interview
<b>Alex Davis</b>	Water Resources Manager	Colorado Parks and Wildlife	Workshop
<b>Grant Davis</b>	General Manager	Sonoma County Water Agency	Workshop
<b>Martha Davis</b>	Executive Manager for Policy Development	Inland Empire Utilities Agency	Workshop
<b>Tom Davis</b>	Manager	Yuma County Water Users' Association	Workshop
<b>Lois DeBacker</b>	Managing Director, Environment	The Kresge Foundation	Interview
<b>Chris DeCardy</b>	Vice President and Director of Programs	The David and Lucile Packard Foundation	Steering Committee
<b>Dan Dooley</b>	Of Counsel	Bolen Fransen Sawyers LLP	Workshop
<b>Ethan Elkind</b>	Associate Director of Climate Change and Business Program	UC Berkeley & UCLA Schools of Law	Workshop
<b>Matt Elliott</b>	Principal	California Environmental Associates	Interview
<b>Jim Enote</b>	Executive Director	Colorado Plateau Foundation	Interview
<b>Andrew Fahlund</b>	Deputy Director	Water Foundation	Steering Committee
<b>Terry Fankhauser</b>	Executive Vice President	Colorado Cattlemen's Association	Workshop
<b>Kathleen Ferris</b>	Executive Director	Arizona Municipal Water Users Association	Workshop
<b>David Festa</b>	Vice President, Ecosystems	Environmental Defense Fund	Interview

<b>Jim Fiedler</b>	Chief Operating Officer	Santa Clara Valley Water District - Water Utility Enterprise	Workshop
<b>Randy Fiorini</b>	Chair	California Delta Stewardship Council	Workshop
<b>Laurel Firestone</b>	Co-Executive Director and Co-Founder	Community Water Center	Interview
<b>Blair Calvert Fitzsimmons</b>	Executive Director	Texas Agricultural Land Trust	Workshop
<b>John Fleck</b>	Journalist and Writer-in- Residence	The University of New Mexico	Workshop
<b>Steve Fleischli</b>	Director and Senior Attorney, Water Program	Natural Resources Defense Council	Workshop
<b>Jenn Fox</b>	Initiative Manager	Water Funder Initiative	Interview
<b>Leslie Friedman- Johnson</b>	Partner	Conservation and Natural Resources Group	Workshop
<b>George Frisvold</b>	Professor	The University of Arizona	Workshop
<b>Ron Gastelum</b>	Former General Manager	Metropolitan Water District	Workshop
<b>Jocelyn Gibbon</b>	Principal	Freshwater Policy Consulting	Workshop
<b>Peter Gleick</b>	President	Pacific Institute	Interview
<b>Barry Gold</b>	Director, Environment Program	The Walton Family Foundation	Steering Committee
<b>Mark Gold</b>	IoES Acting Director, Coastal Center Director, and Adjunct Professor	University of California Los Angeles	Workshop
<b>Dominique Gómez</b>	Director of Market Development	WaterSmart Software	Interview
<b>Kristen Grimm</b>	President	Spitfire Strategies	Workshop
<b>Adel Hagekhalil</b>	Assistant Director	City of Los Angeles Bureau of Sanitation	Workshop
<b>Maurice Hall</b>	Water Program Lead	Water Funder Initiative	Workshop
<b>Eric Hallstein</b>	Economist and Director of Conservation Investments	The Nature Conservancy of California	Workshop
<b>Ellen Hanak</b>	Director of the Water Policy Center	Public Policy Institute of California	Workshop
<b>Brent Harris</b>	Principal	Redstone Strategy Group	Interview
<b>David Harrison</b>	Senior Water Resources Consultant	Moses, Wittemyer, Harrison, and Woodruff, P.C.	Interview
<b>Allison Harvey Turner</b>	Program Director, Environment Program	The S. D. Bechtel, Jr. Foundation	Steering Committee

<b>Marilu Hastings</b>	Vice President, Sustainability Programs	The Cynthia and George Mitchell Foundation	Steering Committee
<b>Taylor Hawes</b>	Colorado River Program	The Nature Conservancy	Workshop
<b>Timothy Hawkes</b>	Director, Utah Water Project	Trout Unlimited	Workshop
<b>David Hayes</b>	Former Deputy Secretary and COO	U.S. Department of the Interior	Interview
<b>Stefan Heck</b>	Research Fellow; Former Director	Stanford Law School; McKinsey & Company	Workshop
<b>Eric Heitz</b>	President	The Energy Foundation	Steering Committee
<b>John Howard</b>	Senior Manager, Global Public Policy and Government Affairs	Dell Computer	Workshop
<b>Bill Hull</b>	Group Chair	Consultative Group on Biological Diversity	Interview
<b>Matt James</b>	President and Co-Founder	Next Generation	Interview
<b>Steve Johnson</b>	Partner	Conservation and Natural Resources Group	Interview
<b>Susan Kaderka</b>	Gulf Coast Regional Director	National Wildlife Federation	Workshop
<b>Brad Kahn</b>	Founder	Groundwork Strategies	Interview
<b>A.G. Kawamura</b>	Former Secretary	California Department of Food & Agriculture/Orange County Produce	Workshop
<b>Mary Kelly</b>	Principal	Parula LLC	Workshop
<b>Doug Kenney</b>	Director, Getches-Wilkinson Center Western Water Policy Program	University of Colorado Law School	Interview
<b>Jim Klinker</b>	Chief Administrative Officer	Arizona Farm Bureau	Workshop
<b>Craig Knowles</b>	Chairman	Murray-Darling Basin Authority	Interview
<b>Eric Kuhn</b>	General Manager	Colorado River Conservation District	Workshop
<b>Clay Landry</b>	Managing Director	WestWater Research	Interview
<b>Jim Leape</b>	Consulting Professor	Stanford Woods Institute; Stanford School of Earth Sciences	Workshop
<b>Kai Lee</b>	Program Officer, Conservation and Science Program	The David and Lucile Packard Foundation	Workshop
<b>Rachel Leon</b>	Executive Director	Environmental Grantmakers Association	Interview
<b>Sharlene Leurig</b>	Director, Water Program	Ceres	Interview

<b>Chloe Lieberknecht</b>	Director of Government Relations and Freshwater Protection	The Nature Conservancy of Texas	Workshop
<b>Andy Lipkis</b>	Founder and President	Treepeople	Workshop
<b>Mark Loch</b>	Director	Redstone Strategy Group	Workshop
<b>Jim Lochhead</b>	CEO/Manager	Denver Water	Workshop
<b>Lynn Lohr</b>	Executive Director	Consultative Group on Biological Diversity	Interview
<b>Katherine Lorenz</b>	President	The Cynthia and George Mitchell Foundation	Steering Committee
<b>Elizabeth Love</b>	Senior Program Officer, Environment, Health and Arts & Culture	Houston Endowment	Workshop
<b>Shelley Luce</b>	Executive Director	Environment Now	Workshop
<b>Jay Lund</b>	Director, Center for Watershed Sciences and Professor of Civil and Environmental Engineering	University of California at Davis	Workshop
<b>Larry MacDonnell</b>	Professor Emeritus	University of Colorado Law School	Interview
<b>Robert Mace</b>	Deputy Administrator	Texas Water Development Board	Interview
<b>Steven Malloch</b>	Principal	Western Water Futures, LLC	Interview
<b>Tom Maloney</b>	Executive Director	Tejon Ranch Conservancy	Interview
<b>Felicia Marcus</b>	Chair	California State Water Resources Control Board	Workshop
<b>Alex Martinez</b>	Ford Fellow	The Rockefeller Foundation	Interview
<b>Tom Mason</b>	Chairman	Texas Water Foundation	Workshop
<b>Katie McCormack</b>	Program Director, Western Region	The Energy Foundation	Steering Committee
<b>Michael McCoy</b>	Senior Program Officer	The Meadows Foundation	Workshop
<b>Brewster McCracken</b>	President and CEO	Pecan Street Project	Workshop
<b>William McDonald</b>	Owner and Manager; Regional Director and Deputy Commissioner; Director	McDonald Water Policy Consulting; Bureau of Reclamation; Colorado Water Conservation Board	Workshop
<b>Bart Miller</b>	Director, Water Program	Western Resource Advocates	Interview
<b>Kevin Moran</b>	Senior Director, Water Program	Environmental Defense Fund	Workshop
<b>Jeffrey Mount</b>	Founding Director, Faculty Emeritus; Senior Fellow	UC Davis Center for Watershed Sciences; Public Policy Institute of California	Workshop

<b>Marc Nathanson</b>	Chairman	Falcon Waterfree Technologies	Workshop
<b>Ben Nuvamsa</b>	Founder and President	KIVA Institute, LLC	Interview
<b>Adrian Oglesby</b>	Director, Utton Center	University of New Mexico	Workshop
<b>Mark Pestrella</b>	Chief Deputy Director	Los Angeles County Department of Public Works	Workshop
<b>Jennifer Pitt</b>	Colorado River Project Director	Environmental Defense Fund	Interview
<b>Kate Poole</b>	Senior Attorney and Litigation Director, Water Program	Natural Resources Defense Council	Interview
<b>Sarah Porter</b>	Executive Director, Kyl Center	Arizona State University	Workshop
<b>Andrew Purkey</b>	Director of Western Water Programs	National Fish and Wildlife Foundation	Interview
<b>Walt Reid</b>	Director, Conservation and Science Program	The David and Lucile Packard Foundation	Steering Committee
<b>Michael Reuter</b>	Director of Freshwater, North America	The Nature Conservancy	Interview
<b>Curt Riffle</b>	Program Officer, Western Conservation Program	The David and Lucile Packard Foundation	Steering Committee
<b>Bill Ritter, Jr.</b>	Director	Center for the New Energy Economy (CNEE) at Colorado State University	Interview
<b>David Rousseau</b>	President	Salt River Project	Workshop
<b>Mary Ruckelshaus</b>	Consulting Professor; Managing Director	Stanford Woods Institute; Natural Capital Project	Interview
<b>Andrew Sansom</b>	Executive Director	The Meadows Center for Water and the Environment	Interview; Workshop
<b>Michael Scott</b>	Program Officer, Environment Program	The William and Flora Hewlett Foundation	Steering Committee
<b>Patricia Sekaquaptewa</b>	Hopi Appellate Court Justice & Assistant Professor	Alaska Native Studies and Rural Development, University of Alaska, Fairbanks	Interview
<b>Ann Sewill</b>	Vice President of Housing and Economic Development	California Community Foundation	Workshop
<b>Peter Silva</b>	President	Silva-Silva International	Workshop
<b>Carter Smith</b>	Director	Texas Department of Parks and Wildlife	Interview
<b>Lester Snow</b>	Executive Director	Water Foundation	Steering Committee
<b>Kathryn Sorensen</b>	Water Services Director	City of Phoenix	Workshop
<b>Stacey Steinbach</b>	Executive Director	Texas Alliance of Groundwater Districts	Workshop

<b>Tom Steinbach</b>	Program Director, Environment Program	The William and Flora Hewlett Foundation	Steering Committee
<b>Nancy Stoner</b>	Water Program Director; Former Acting Assistant Administrator for Water	Pisces Foundation; U.S. Environmental Protection Agency	Steering Committee
<b>Brian Stranko</b>	Water Program Director	The Nature Conservancy	Interview
<b>Martin Stuchtey</b>	Director	McKinsey & Company	Interview
<b>Tim Sullivan</b>	Former Colorado State Director	The Nature Conservancy	Interview
<b>Nancy Sutley</b>	Chief Sustainability & Economic Development Officer	Los Angeles Department of Water and Power	Workshop
<b>Leon Szeptycki</b>	Executive Director	Stanford Woods Institute - Water in the West	Workshop
<b>Ann Tartre</b>	Director of Corporate Partnerships	Protect the Flows	Workshop
<b>Melinda Taylor</b>	Director, Kay Bailey Hutchinson Center	University of Texas	Workshop
<b>Mark Tercek</b>	President and CEO	The Nature Conservancy	Interview
<b>Barton "Buzz" Thompson</b>	Professor of Natural Resources Law; Director	Stanford Law School; Woods Institute	Workshop
<b>Claire Thorp</b>	Assistant Director, Western Partnership Office	National Fish and Wildlife Foundation	Interview
<b>Sam Tucker</b>	Director	Colorado River Sustainability Campaign	Interview
<b>Brad Udall</b>	Senior Water and Climate Research Scientist/Scholar	Colorado Water Institute, Colorado State University	Workshop
<b>Kathryn Viatella</b>	Program Manager	Water Foundation	Workshop
<b>Reagan Waskom</b>	Director; Chair and Professor	Colorado Water Institute; Colorado State University Water Center	Workshop
<b>Nancy White</b>	Program Advisor, Water	TomKat Charitable Trust	Interview
<b>David Yarnold</b>	President and CEO	National Audubon Society	Interview
<b>Scott Yates</b>	Director, Western Water Project	Trout Unlimited	Workshop
<b>Jay Ziegler</b>	Director of External Affairs & Policy, Sacramento	The Nature Conservancy	Workshop

**Photo credits:**

Front cover: Russell Schnitzer, Rio Grande River, CO

Water pump/irrigation: Maurice Hall, Sacramento Valley, CA

Cranes flying/back cover: Russell Schnitzer, sandhill cranes on the Platte River, NE

Dam: Maurice Hall, Folsom Dam, Folsom, CA



The Water Funder Initiative is a collaborative effort to identify and activate promising water solutions through strategic philanthropic investments in the United States, starting in the West, where scarcity and reliability of clean water are urgent issues. WFI is supported and guided by the S. D. Bechtel, Jr. Foundation, Energy Foundation, the William and Flora Hewlett Foundation, the Cynthia and George Mitchell Foundation, the David and Lucile Packard Foundation, Pisces Foundation, The Rockefeller Foundation, Walton Family Foundation, and Water Foundation.

### Water Funder Initiative Project Team

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