

# Advancing Water Resilience

**35 YEARS AND BEYOND**

2022



The Pacific Institute envisions a world in which society, the economy, and the environment have the water they need to thrive now and in the future. In pursuit of this vision, the Institute creates and advances solutions to the world's most pressing water challenges, such as unsustainable water management and use; climate change; environmental degradation; food, fiber, and energy production for a growing population; and basic lack of access to fresh water and sanitation. Since 1987, the Pacific Institute has cut across traditional areas of study and actively collaborated with a diverse set of stakeholders, including leading policymakers, scientists, corporate leaders, international organizations such as the United Nations, advocacy groups, and local communities. This interdisciplinary and independent approach helps bring diverse groups together to forge effective real-world solutions.

## OUR MISSION

The Pacific Institute creates and advances solutions to the world's most pressing water challenges.

## OUR VISION

Our vision is to create a world in which society, the economy, and the environment have the water they need to thrive now and in the future.

## OUR COMMITMENT TO DIVERSITY, EQUITY, AND INCLUSION

The Pacific Institute continues to work toward a future where diversity fuels our innovation, equity informs our research, and inclusion shapes our path forward. Building on our proud history of integrating social equity into our water and climate research, we continually strive to enhance our internal DEI approach, acknowledging that this is an ongoing journey towards progress. By doing so, we aim to foster an environment where every voice is empowered, contributing to a dynamic intersectional approach that spans disciplines and geographies, and is integral to our mission of solving the world's most pressing water challenges.

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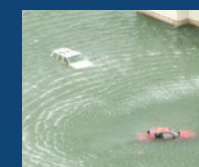
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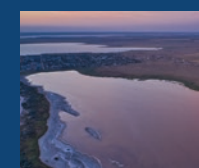
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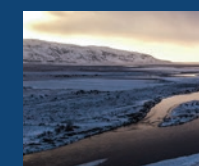
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# Charting the Course for a Water-Resilient Future

## The need has never been greater.

For 35 years, the Pacific Institute has provided trusted science-based research, recommended feasible policy and practice solutions, and convened diverse stakeholders—from frontline communities and water utilities to Fortune 500 companies and governments—to advance solutions for the world’s most urgent water challenges. From the Colorado River Basin of the drought-prone US West to the world stage at the UN Climate Change Conference in Egypt, decision-makers turn to the Pacific Institute for science-backed leadership on water resilience now more than ever.

**2.2 Billion  
People**

Lack access to safely  
managed drinking water

**90% of  
Disasters**

On Earth are water-related

**\$1 Trillion**

Annual investment needed  
globally to sustainability  
manage water by 2030



## Dear Friends,

This year, the world was confronted with escalating crises—both environmental and geopolitical. Heavy rainfall in the western United States, increasing water scarcity around the world, unprecedented flood events in Pakistan, and conflict in Ukraine that left six million people with limited or no access to safe water. These sobering events underscore the increasing importance of our mission—to create and advance solutions to the world’s most pressing water challenges.

In 2022, the Pacific Institute made significant strides addressing these challenges, shaping global discourse on water resilience. We launched six reports and innovative tools, while convening partners locally and globally as key levers of change.

**Advancing Water Resilience and Equity:** The groundbreaking *Untapped Potential of California’s Urban Water Supply* report underscored the need to increase water efficiency and reuse approaches, making media headlines and influencing policy. Our work in the Colorado River Basin and Salton Sea contributed to the announcement of a US\$250 million commitment from the US Department of the Interior. Innovative leak detection work received recognition through the Los Angeles Better Buildings Challenge’s “Best Buildings” Innovations Award, leading to new collaborations and gaining the attention of other regional leaders, including the Mayor of Phoenix, for potential implementation. Recognizing water crisis is experienced disproportionately by frontline communities, we launched a new national Water and Climate Equity strategy, focusing research and outreach on water security, climate change, and social equity across the United States.

**Forging Global Impact and Thought Leadership:** At the forefront of global water discussions, our presence resonated at events spanning the globe—from Stockholm World Water Week to the WaterSmart Innovations Conference and from COP27 to the World Economic Forum Annual Meeting.

**Accelerating Corporate Water Stewardship:** With the CEO Water Mandate, a partnership between the Pacific Institute and the United Nations Global Compact, welcoming roughly 40 new endorsing companies, we continue to accelerate corporate water stewardship. In just three years since its 2020 inception, the Water Resilience Coalition expanded to 29 global companies with combined market capitalization of more than US\$3 trillion. The Coalition launched its ambitious 100-basin 2030 roadmap, established its Brazil Chapter, and expanded to 21 collective action initiatives in 15 basins across six countries. This growth illustrates the private sector’s increasing momentum to advance SDG 6 solutions—with the Pacific Institute playing a key role.

**Organizational Growth:** Internally, our Diversity, Equity and Inclusion (DEI) Committee led an empowering journey to further integrate diversity, equity, and inclusion in our operations and culture. We ushered in significant organization-wide changes, including adopting a new brand direction, developing our inaugural theory of change, and transitioning to impact reporting—pivotal steps in our organizational evolution. Our team also expanded, reaching 30 staff members across five countries.

Looking ahead, we stand at a critical juncture where commitments must turn into actions. The severity of the global water crisis calls for an aggressive and prompt response. We remain committed to leveraging our unique role as a bridge between science, policy, and practice to advance water resilience—both in the United States and on a global scale. We express gratitude to our team, partners, and supporters, who continue to trust and rely on our work. As we prepare to solve water challenges ahead, we are more convinced than ever to shape a future—where people and nature have the water they need to thrive.

In partnership,



Sally Liu  
Chair, Pacific Institute Board of Directors



Jason Morrison,  
President, Pacific Institute  
Head, CEO Water Mandate



# Looking Ahead to 2030

“What makes this organization unique is their impact and presence at the local, regional, national, and international level, and this impact and presence is one of the main reasons we continue to support the Pacific Institute.”  
—Meg Nibbi and Bob Nibbi,  
Pacific Institute Supporters

## Thought Leadership on Water Resilience Supports Broader Sustainable Development Goals—From Climate to Gender Equality to Peace

### The Pacific Institute’s Commitment to the Water Action Agenda

On page 26, we highlight a sampling of some, but not all, of the key ways the Pacific Institute’s work supports not only the SDG 6 targets, but also the broader 17 SDGs using a multi-benefit or co-benefit approach.

As you read the impact stories throughout this report, we encourage you to consider how investments in water resilience lead to the achievement of not only water goals, but wide-ranging goals across many priorities.

The year 2022 marked three years since the Pacific Institute announced a visionary organizational goal to “catalyze the transformation to water resilience in the face of climate change by 2030.” What does the term “water resilience” mean exactly?

### Water Resilience Defined

The Pacific Institute’s pioneering work at the intersection of water and climate has fueled our leadership defining what long-term water resilience looks like—and developing solutions to achieve it. Our [Water Resilience Issue Brief](#) defines water resilience as “the ability of water systems to function so that nature and people, including those on the frontlines and disproportionately impacted, thrive under shocks, stresses, and change.”

As climate change intensifies the water crisis, building long-term water resilience is urgently needed. Solutions include integrating Nature-Based Solutions with grey infrastructure and increasing investments in water efficiency and reuse—all through a lens of equity. Learn more about how we advanced many of these solutions during 2022 in the impact stories throughout this report.

### Contributing to Progress on Wide Range of Sustainable Development Goals



The concept of water resilience acknowledges the interconnectedness between water and a range of nexus issues, including climate change, biodiversity, energy, gender, and health. These connections between sustainability priorities are illustrated by the United Nations’ Sustainable Development Goals (SDGs). In fact, it is widely recognized that solving for SDG 6 for water and sanitation is needed before we can achieve nearly all the other SDGs of the 2030 Agenda.

Understanding water’s many quantifiable co-benefits also aligns with the Pacific Institute’s [Multi-Benefit Approach to Water Management](#) framework, which acknowledges “because water is deeply linked with economic, environmental, and community well-being, investing in water can address water challenges while providing additional ‘co-benefits.’”



### 2022 IMPACTS



6  
Reports  
Launched



7,900+  
Media  
Mentions



18 Billion+  
Potential Global  
Media Impressions



270+  
Stakeholders  
Convened



1.1 Million+  
Webpage  
Views



1,000+  
Social Media  
Posts



494,000+  
Social Media  
Impressions



60+  
Major Speaking  
Engagements



# Trusted Thought Leadership Spans the Globe

## At Regional, National, and Global Events

The Pacific Institute's 2022 events calendar spotlighted water resilience on regional, national, and global stages. From the Salton Sea Summit, in California, USA, to COP27 in Sharm El Sheikh, Egypt, our voice was a significant lever of change in some of the year's most important national and international forums.

**January: Southern California Water Coalition's Quarterly Luncheon, Newport Beach, USA**  
The Pacific Institute participated in the Southern California Water Coalition's Quarterly Luncheon, underscoring its commitment to local partnerships.

**April: Salton Sea Summit, Palm Desert, California, USA**  
Co-hosted by the Pacific Institute and University of California, Riverside, the Salton Sea Summit ignited dialogue around community engagement in the Salton Sea plans.

▶ Explore the Summit Website.



**October: WaterSmart Innovations Conference and Exposition, Las Vegas, Nevada, USA**  
The Pacific Institute presented an in-depth case study on how communities can leverage water to meet energy and climate goals, focused on California's untapped urban water supply potential through efficiency, reuse, and stormwater capture, and shared results from a collaborative project in Southern California aimed at advancing water efficiency in low-income housing.

▶ Watch the video

**September: 2022 Energy & Water Nexus, Virtual**  
Hosted by the Bay Planning Coalition, the Pacific Institute participated in a discussion on 'Alternative Water Sources for Drought Resilience', showcasing its thought leadership in water resilience.

▶ Watch the event recording

**October: Natural Infrastructure for Water Solutions Forum on Performance and Metrics, Winnipeg, Canada**  
The Pacific Institute collaborated with the International Institute of Sustainable Development and other strategic leaders to discuss pressing issues at the intersection of natural infrastructure and water.

**October: 5<sup>th</sup> National Adaptation Forum, Baltimore, Maryland, USA**  
The Pacific Institute hosted a Climate Adaptation Knowledge Exchange (CAKE) Tools Workshop, focusing on corporate investment in Nature-Based Solutions (NBS). Our researchers also served on the Steering Committee and the Equity & Climate Justice Working Group, underscoring our commitment to robust climate adaptation strategies.

**June: GreenFin, New York City, USA**  
At GreenFin 22, a prime environmental, social, and governance (ESG) event aimed at bridging sustainability and capital markets, the Pacific Institute provided thought leadership on the role of multi-sector collective action on water resilience.

**December: Colorado River Water Users Association 2022 Conference, Las Vegas, Nevada, USA**  
At the Colorado River Water Users Association 2022 Conference, Pacific Institute researchers engaged in critical dialogues, notably featuring in a panel on "Water Lessons from the Business Community: How Businesses are Adapting to a Less Predictable Future."



**May: Alliance for Water Stewardship (AWS) 2022 Global Water Stewardship Forum, Edinburgh, Scotland**  
The Pacific Institute provided global thought leadership on NBS and the Water Resilience Assessment Framework (WRAF) at the AWS Forum, a key global exchange of information and partnerships.



**August: Stockholm World Water Week, Stockholm, Sweden**  
The Pacific Institute delivered a virtual presentation on Innovative Strategies for Meeting Water, Energy, and Climate Goals, launched the Water Action Hub Corporate Water Benchmarking Tool, shared the WRAF Corporate Guidance, and showcased the NBS Benefits Explorer.

▶ Watch the video



**September: International Water Association's World Water Congress, Copenhagen, Denmark**  
The Pacific Institute showcased its thought leadership by sharing insights on cross-border problem-solving, water reuse programs, and water efficiency.

**November: COP27, Sharm El Sheikh, Egypt**  
The United Nations Climate Change Conference (COP27) was a launch pad for the Pacific Institute's corporate water stewardship thought leadership. In addition to the Water Action Hub 4.0, the NBS Stakeholder Engagement Guide and the WRAF Corporate Guidance were launched at the conference. The WASH4Work initiative issued the Business Declaration for Climate Resilient WASH, and the Water Resource Coalition (WRC) premiered the first entry in the Ripples in Resilience media series.

▶ Watch the video



**May: World Economic Forum, Davos, Switzerland**  
The Pacific Institute thought leaders advanced global corporate action on water resilience, launching an ambitious 2030 strategy to achieve quantifiable positive water impact in 100 water-stressed basins, contribute to water security for 3 billion people, and enable equitable access to water, sanitation, and hygiene (WASH) for more than 300 million people by 2030.



“The water agenda broke through new barriers at COP27 in Sharm el Sheikh, Egypt. For the first time, the final COP declaration directly acknowledged the critical role of water and its many co-benefits.”



—Dr. Amanda Bielawski  
Director of Communications & Outreach, Pacific Institute



# Groundbreaking Research Spurs Policy Shifts In California And Beyond

Persistent challenges and severe drought have shone a spotlight on the vulnerability of California's water systems, highlighting a critical problem that demands immediate attention. This crisis, while daunting, also offers an opportunity to rethink the state's water supplies and strategies for the 21st century and beyond.

To this end, in 2022 the Pacific Institute launched a seminal study titled *The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture*. The report highlights a forward-thinking path towards drought mitigation and long-term water resilience in the region. As California is considered a microcosm for challenges facing many drought-prone regions, the work has widespread implications for influence across the United States and globally.

Through the application of rigorous scientific methods and innovative water efficiency measures, the report concludes California's urban water usage could be reduced by a significant 30% to 48%, a savings of 2.0 million to 3.1 million acre-feet of water annually. This would yield far-reaching implications including decreased water withdrawals from overutilized rivers and aquifers, cost reductions, and lower energy use and greenhouse gas emissions.

The Pacific Institute's research also identified new supply augmentation methods. For instance, the potential for water reuse could be tripled, while the added capacity for stormwater capture calculated ranges from 580,000 acre-feet in a dry year to a remarkable 3 million acre-feet during a wet year.

But perhaps the most significant impact of the report is the hope it instilled in communities across California and beyond. According to Pacific Institute Director of Research, Heather Cooley, **"The report serves as a rallying cry for communities across California, many of which were already successfully implementing these innovative water strategies, rapidly scaling these strategies across the state, millions more Californians could see short-term drought relief and longer-term improvements in their water supply reliability."**

The launch of the report marked a milestone in the team's ongoing efforts to build a more resilient and water-secure future, with its findings contributing to the advancement of California Senate Bill 1157. In 2023, our aim is to continue disseminating these findings to communities, NGOs, companies, and policymakers. The team is working towards broadening the scope of this work from California to the national level.

READ THE REPORT



**30-48% Potential Urban Water Use Reduction Through Efficiency Measures**

**“This study proved to be a game-changer in the way we approach urban water supply. It highlights the immense, untapped potential for reducing water use and boosting local supplies through innovative strategies. The report findings offer a roadmap to create lasting change, setting an example for the rest of the United States and the world.”**



—Tracy Quinn  
President, Heal the Bay & Board Member, Metropolitan Water District of Southern California



**2,440+ Report Downloads**



**4,000+ Landing Page Views**



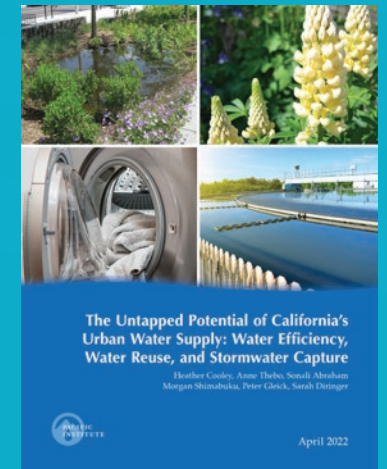
**15+ Briefings for Policymakers, Media, Water Managers & NGOs**



**500+ Briefing Registrants**



**3.3 Billion+ Potential Global Media Impressions**



## INFLUENCING PUBLIC POLICY TO ADVANCE SYSTEMS-LEVEL SOLUTIONS:

This report's findings have already contributed to one significant policy shift—with benefits to be seen well into the future. The data-driven research was a key lever to influence public policy through the 2022 passage of California Senate Bill 1157. The new law strengthens the state's indoor water use standard. When fully implemented in 2030, the change could save up to 128 billion gallons—or 394,000 acre-feet—of water annually amid historic drought. This key impact underscores the critical role of science in shaping water management strategies.

By promoting a reduction in per-capita water consumption and conducting a comprehensive economic analysis of the impact, the bill paved the way to bolster California's resilience to intensifying climate impacts and severe drought conditions.

The report findings made it to the front page of **Los Angeles Times** as well as many other media outlets.

## Los Angeles Times



## The San Diego Union-Tribune



The Press Democrat

THE SACRAMENTO BEE

FAST COMPANY



# Water Efficiency Advances Across Country Through Innovative Leak Detection Program

As drought—and longer-term drying trends—worsen throughout the western United States, cities must increase water efficiency and conservation to ensure local water resilience. Solving what may seem like a small problem can add up to big results toward that goal.

Leaky toilets are a leading source of indoor water waste. The US Environmental Protection Agency (EPA) estimates that every year, household leaks waste nearly 1 trillion gallons of water nationally. These leaks are notoriously hard to detect in large apartment buildings.

Since 2020, the Pacific Institute has forged an innovative multi-sector partnership to install remote leak sensors to save water in affordable multifamily housing. During 2022, the initiative was conducted in collaboration with Bonneville Environmental Foundation and Sensor Industries, while leveraging funding from corporate members of the CEO Water Mandate and California Water Action Collaborative.

This collective effort has enabled four pilot projects that equipped 1,425 toilets with leak sensors and alert systems. The result? An estimated savings of 7 million gallons (21 acre-feet) of water per year, improving building maintenance efficiency and reducing water bills.



Senior Researcher Cora Snyder encapsulates the project progress: **“A particularly novel aspect of this initiative was the comprehensive research combined with the on-ground implementation. This included leveraging private investment to support public policy goals. Moving ahead we will be evaluating the quantitative and qualitative impacts, as well as mechanisms for scaling this work.”**

SDG ALIGNMENT

6 CLEAN WATER AND SANITATION

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

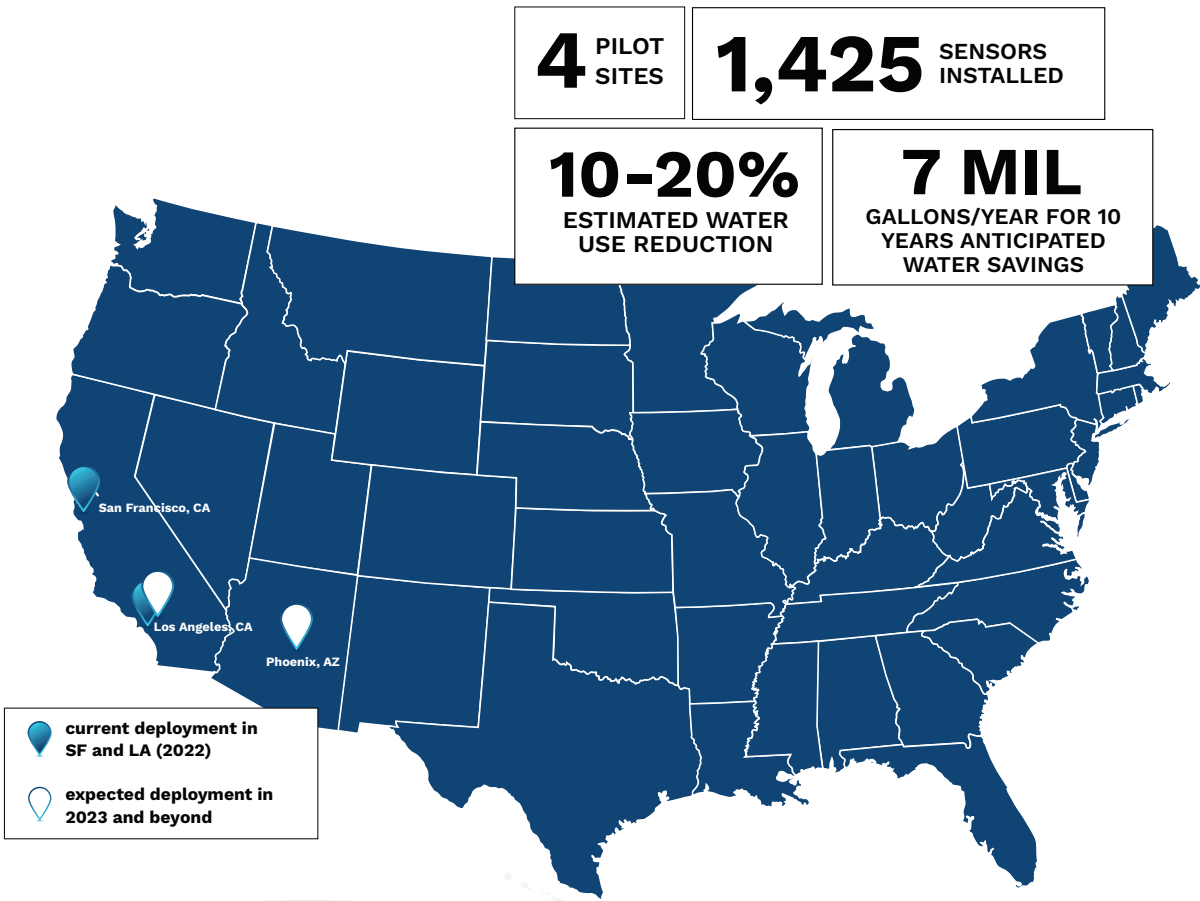
15 LIFE ON LAND

17 PARTNERSHIPS FOR THE GOALS

WATCH THE 2022 INNOVATION AWARDS VIDEO

**1 trillion gallons**  
Water wasted nationally through household leaks per year

By November 2022, our research team had started discussions with Mayor Kate Gallego about replicating the project in Phoenix, Arizona. Looking ahead to 2023 and beyond, new installations are under development in California and Arizona in pursuit of more water-efficient and equitable outcomes for multi-family housing. In recognition of its innovative and intersectional nature, this project received a Water Innovation Award from the Los Angeles Better Buildings Challenge in 2022.



“This project helps increase access to water-saving technology for our underserved communities, while highlighting how partnerships between public, private and nonprofit agencies can support our shared sustainability goals and create a more resilient future for our region.”



—Gary Tilkian  
Resource Specialist, Water Efficiency Team,  
Metropolitan Water District of Southern California



By gathering, analyzing, and mapping water-related conflicts for more than 30 years, the Pacific Institute has helped to raise awareness, identify trends, and outline potential solutions for these complex issues. Its work does not exist in isolation, however. In collaboration with distinguished partners such as the World Resources Institute, the Water, Peace, and Security Partnership, Oregon State University, and researchers from around the world, the Pacific Institute has been instrumental in developing novel tools and strategies intended to support mediation of water-related conflicts.

Through continued research, analysis, and data sharing, the Pacific Institute is playing a crucial role in navigating the growing global challenge of water security and conflict.

**“Efforts to reduce tensions over fresh water must include accelerated action to provide basic safe water and sanitation to the billions of people that still lack these water services, diplomatic efforts to enforce international laws of war protecting civilians, and more cooperative management over rivers and aquifers that are shared internationally.”**



—Dr. Peter Gleick  
Senior Fellow & Co-Founder  
Pacific Institute

**Click to hear the  
podcast featuring  
this work**



**“As water crises accelerate today, they trigger systemic stresses that spark conflict, food insecurity, and human migration. Fortunately, the Pacific Institute helps us learn from past and present water conflicts in order to map paths to a more peaceful, stable, equitable water world in the changing climate.”**



—J. Carl Ganter  
Managing Director, Circle of Blue

**1,200+**  
**Water**  
**Incidents**  
**Cataloged**

## SDG ALIGNMENT





# Supporting Sustainable Water Management in the Colorado River Basin

“The Salton Sea has long been the linchpin of water resilience for the Colorado River Basin. Without IID’s aggressive participation, the Basin can never achieve stability. While this is only a first step and will not be sufficient on its own to protect either the Salton Sea or Lake Mead, this landmark agreement demonstrates much-needed federal commitment to the Salton Sea and IID’s commitment to improving Basin resilience.”



—Michael Cohen  
Senior Researcher, Pacific Institute

The Colorado River Basin, a crucial water source for seven western U.S. states, is confronting a grave crisis. The river’s reservoirs, including Lake Mead and Lake Powell, approached critically low levels in 2022 due to chronic overconsumption and the accelerating impacts of climate change.

The Pacific Institute addresses this urgent problem through research and engagement, aiming to promote scientifically informed water management decisions that can avert severe water shortages, ensure sustainable usage, and mitigate the escalating effects of climate change on the Colorado River Basin.

## POLICY ENGAGEMENT AT THE SALTON SEA

In November 2022, the Pacific Institute issued a statement regarding Imperial Irrigation District’s (IID) approval of a landmark Salton Sea agreement. This agreement brings together federal and state governments and commits \$250 million in federal funding to Salton Sea projects. The agreement commemorates a state proposal to conserve one million acre-feet of water over the next four years to protect Lake Mead, marking a crucial step towards improved water resilience for the Colorado River Basin.

Senior Researcher Michael Cohen served actively on California’s Salton Sea Long-Range Plan advisory committee and developed the “Water Optimization” concept reviewed in the state’s draft long-range plan. In addition, he drafted comments on behalf of a group of environmental NGOs and local environmental justice organizations on several Salton Sea documents and proposals, including California’s annual Salton Sea report, an Army Corps of Engineers draft environmental assessment, and the state’s draft long-range plan.

Throughout 2022, the Pacific Institute organized and promoted a series of interactive webinars to engage experts, practitioners, and the public on the Salton Sea crisis, enlisting esteemed panelists from leading organizations. We facilitated meaningful dialogues and shared innovative ideas through these webinars and informative sessions.

## A PLATFORM FOR CONVENING THE PUBLIC ON THE SALTON SEA CRISIS

Throughout 2022, the Pacific Institute organized and promoted a series of interactive webinars to engage experts, practitioners, and the public on the Salton Sea crisis, enlisting esteemed panelists from leading organizations. We facilitated meaningful dialogues and shared innovative ideas through these webinars and informative sessions.

## A TRUSTED VOICE IN THE MEDIA

As a globally recognized thought leader in developing and promoting sustainable solutions to the water crisis in the Colorado River Basin, the Pacific Institute’s insights were widely covered by the media in 2022. Our research, commentary, and informed perspectives have made significant contributions to public understanding of the issue, reflecting our status as a trusted voice in the media.



Changes in Avian Diversity and Abundance at the Salton Sea



Salton Sea Community Science Webinar



Salton Sea Water Quality



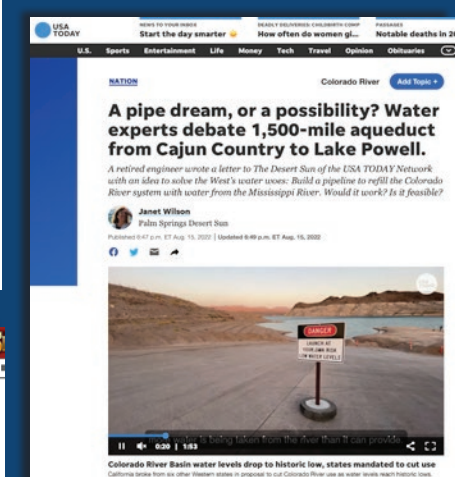
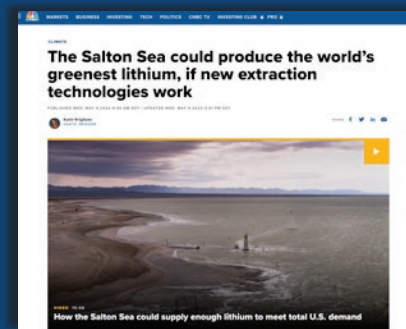
Best Practices for Community Engagement

WATCH THE VIDEOS

COLORADO RIVER BASIN

2,000+ Media Mentions

6.6 Billion+ Potential Global Media Impressions





# Pacific Institute Launches New Water & Climate Equity Strategy for United States

Globally, more than 2.2 billion people lack access to safely managed drinking water (UN,2019). Meanwhile, in the United States, millions of people live without clean, reliable water. Many do not have access to basic plumbing or depend on water systems that violate the Safe Drinking Water Act. In response to these challenges, during 2022, the Pacific Institute launched a new national Water and Climate Equity strategy, focusing research and outreach capabilities on water insecurity, climate change, and social equity across the United States.

The strategy builds upon the Pacific Institute’s long-standing work on water equity and the Human Right to Water, adopting a collaborative approach to support frontline communities. This strategy intends to address the disproportionate impacts of water insecurity and climate change on marginalized communities, including rural communities, low-income communities, and communities of color.

In collaboration with the Rural Community Assistance Partnership (RCAP) and the Livelihoods Knowledge Exchange Network (LiKEN), the Institute is evaluating the impacts of climate change and the preparedness needs of small rural communities in the United States. Additionally, the Institute is working hand-in-hand with DigDeep, aiming to assess the impacts of climate change on WASH in frontline communities throughout the United States.

[WATCH THE VIDEO](#) 

“The lack of the Human Right to Water in the United States is an overlooked problem. Climate change is now posing additional challenges to ensuring frontline communities have clean, reliable, and affordable water access.”



—Dr. Shannon McNeeley  
Senior Researcher and Water and Climate Equity Lead,  
Pacific Institute

“The United States has yet to recognize the Human Right to Water nationally. It also fails to meet the United Nations Sustainable Development Goal for clean water and sanitation.”



—Heather Cooley  
Director of Research, Pacific Institute





# Expanding Our Corporate Water Stewardship Horizons



The Pacific Institute, in partnership with the United Nations Global Compact, is leading the charge to mobilize the private sector through the CEO Water Mandate and Water Resilience Coalition.

In 2022, the CEO Water Mandate convened industry-leading experts to develop new best practices on water stewardship. With the support of the Pacific Institute, the Mandate published the *Stakeholder Engagement Guide For Nature-Based Solutions* and specialized *Corporate Guidance for the Water Resilience Assessment Framework* introduced later in the report. Our researchers developed a groundbreaking methodology to forecast and value the benefits of nature-based solutions. With the CEO Water Mandate welcoming 38 new endorsing companies, the scale of action around the world is only set to increase in years to come.

## CEO WATER MANDATE 2022 GROWTH



## WATER RESILIENCE COALITION 2022 GROWTH

The Water Resilience Coalition (WRC) is a CEO-led, industry-driven initiative under the CEO Water Mandate, a partnership between the UN Global Compact and the Pacific Institute, aimed at addressing the global water crisis. In 2022, the WRC continued to grow with three new members (29 total members) and 18 partners.



## WORLD LEADERS AT THE UNITED NATIONS GENERAL ASSEMBLY

Jason Morrison, President of the Pacific Institute and Head of the CEO Water Mandate, convened with world leaders during the United Nations General Assembly (UNGA) in September to address some of the world’s most pressing water issues. Partnerships with organizations like Water.org are central to the Pacific Institute’s work leading the CEO Water Mandate and its WRC initiative, both focused on engaging the corporate sector to accelerate action towards water resilience.

## CEO CIRCLE

The WRC continued to be guided by the CEO Circle, a group of Leadership Committee CEOs who meet biannually to review progress and steer actions. This selective group of leaders works tirelessly to elevate the status of water on the global corporate agenda and advance pioneering industry actions.





# Water Resilience Coalition Uniting Companies in Collective Action—in Brazil and Beyond

Dercilio Aristeu Pupin, an organic farmer in Piracaia, Brazil, knows firsthand just how devastating drought can be—and how collective action can respond with effective, promising results.

Dercilio saw his once-fertile soil grow parched and his productive pastures dry up from the worsening effects of climate change. His livelihood, that of his community and that of millions of residents of the Piracicaba, Capivari, and Jundiá (PCJ) river basin were at grave risk.

The PCJ river basin supplies more than 70% of the region’s water, including for Brazil’s largest city of São Paulo. The region has gone through seven droughts in the last decade. Recognizing the need for action, Dercilio collaborated with student volunteers to lead watershed restoration projects in the PCJ basin. This initial campaign leveraged the same fact that guides the Pacific Institute’s WRC: acting together enables far more impact than acting alone.

In 2016, Ambev—endorser of the CEO Water Mandate and subsidiary of WRC Member ABInBev—partnered with The Nature Conservancy to support the São Paulo Water Fund. The project works with

the members of the Piracaia community like Dercilio to incentivize NBS for watershed restoration.

In total, the project has worked with over 1,500 people to take on-the-ground action, with direct economic impacts on 11,000 community members and positive influence on the water availability of 12 million Brazilians living near São Paulo.

In 2022, the WRC and Global Compact Network Brazil established the Brazil Chapter of the WRC. The chapter brings together the local network, NGOs, multinational WRC members and local Brazilian companies to collaborate on multiple collective action water projects, such as the São Paulo Water Fund in prioritized basins. Four other WRC members—The Coca-Cola Co., Cummins Inc., Eco-lab and Starbucks—joined ABInBev in supporting the water fund, helping to multiply the economic, biodiversity, and health benefits far beyond the reach of a single company or partnership. These impacts are the first of many. By 2030, the São Paulo Water Fund has the potential to boost water quantity by 559 million m3 and sequester one million tons of CO2/year.

[WATCH THE VIDEO](#)

**WRC 2030 AMBITION**  
ACHIEVING POSITIVE WATER  
IMPACT IN OVER 100  
WATER-STRESSED BASINS  
THAT SUPPORT OVER  
THREE BILLION PEOPLE.

**21 PROJECTS**

**IN 15 BASINS**

**IN 6 COUNTRIES**



“You can’t move mountains alone. The goal of generating positive impact for water—a central goal of the Coalition—depends on collective action.”

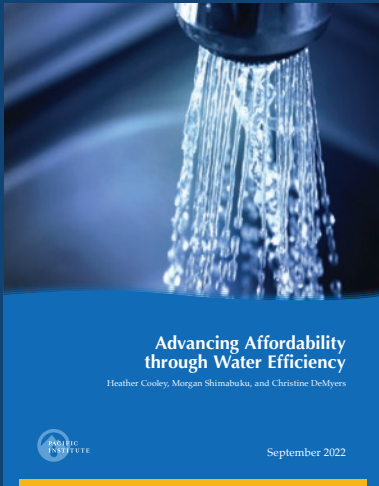


—Renata Van der Weken  
Supply Environment & Energy Director Ambev, Brazil





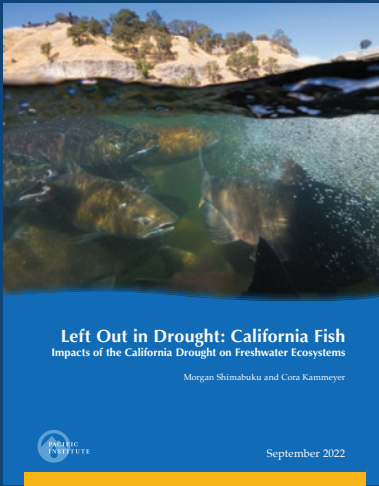
# Introducing Our Latest Research, Tools And Frameworks For Impact



**Advancing Affordability through Water Efficiency**

In September, the Pacific Institute released a critical white paper, *Advancing Affordability through Water Efficiency*, which discovered that improvements in water conservation and efficiency can enhance water affordability for not only the conserving households but also the broader community. The paper highlighted how water efficiency measures both inside and outside the home can drastically cut household water use, which consequently results in an immediate reduction in household water bills and potentially wastewater and energy bills.

[READ THE REPORT](#)



**Left Out in Drought**

In September, the Pacific Institute released *Left Out in Drought: California Fish*, shedding light on an often overlooked issue: the environmental impacts of drought. Leveraging the best data available, the report establishes the critical role of warmer water temperatures, increased algal blooms, and decreased stream flows in exacerbating these impacts. Though centered on the Sacramento River, San Joaquin River, and San Francisco Bay-Delta, its insights resonate with broader trends in California and beyond. Crucially, this comprehensive study also points towards strategies to support healthier ecosystems in the face of future droughts.

[READ THE REPORT](#)

**“When informed by science, the policy and management decisions we make today can help ensure better outcomes in the future for California’s fish, aquatic ecosystems, and those who rely on and benefit from them.”**

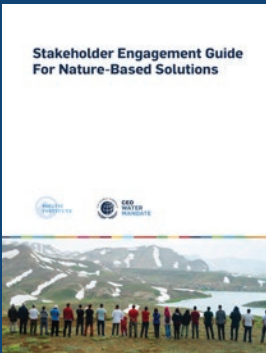


—Morgan Shimabuku  
Senior Researcher, Pacific Institute

**“This guide offers practical steps on the who, when, where, and why of stakeholder engagement for those looking to invest in NBS projects.”**



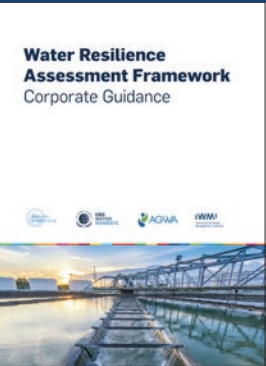
—Dr. Gregg Brill  
Senior Researcher,  
Pacific Institute



**Stakeholder Engagement Guide for Nature-Based Solutions**

In July, the Pacific Institute released the *Stakeholder Engagement Guide for Nature-Based Solutions*. Taking the pragmatic approach to stakeholder engagement, the guide outlined general principles and best practices to be considered across five different stages of an NBS project. Often overlooked in NBS literature, stakeholder engagement is a critical component of a successful intervention. The guide offers flexibility to fit the unique circumstances of each project along with robust best practices to promote effective engagement.

[DOWNLOAD THE GUIDE](#)



**Water Resilience Assessment Framework**

The Pacific Institute in partnership with the CEO Water Mandate, Alliance for Global Water Adaptation (AGWA) and International Water Management Institute (IWMI) published *Corporate Guidance for the Water Resilience Assessment Framework*. This guide encourages corporate entities to actively interact with essential water systems for sustaining business operations over time and provides a standard approach for assessing and enhancing resilience with industry-specific examples. Along with the guide, companies are offered a set of ‘Water Resilience Indicators’ and a ‘Resilience Scoring Tool’ for practical implementation. The corporate guidance is now available for pilot testing.

[ACCESS THE GUIDANCE](#)



**Corporate Water Benchmarking Tool**

The Pacific Institute facilitated the launch of the Corporate Water Benchmarking Tool and began the integration of the NBS Benefits Explorer Tool. With these new features, the platform welcomed over 1,100 new registered users, allowing them to explore partnership opportunities and better comprehend potential actions within their operations.

[EXPLORE THE TOOL](#)



**Net Positive Water Impact**

Alongside the Water Resilience Coalition and CEO Water Mandate, the Pacific Institute facilitated the launch of an educational campaign supporting the Net Positive Water Impact (NPWI) concept. NPWI is an enterprise ambition that manifests in water-stressed basins to create impact where it matters most. The campaign effectively employed an array of communication tools to spread awareness of NPWI principles and showcased WRC member companies’ innovative efforts in incorporating NPWI into their water management strategies.

[EXPLORE THE CAMPAIGN](#)



# Advancing Progress on SDG 6 and the 2030 Sustainable Development Agenda



Pacific Institute supports the Sustainable Development Goals

### TARGETS 6.1 & 6.2: WATER AND SANITATION

Influential role pushing for the formal declaration of the Human Right to Water. Water and Climate Equity initiative advances equitable WASH access in US. Water Resilience Coalition 2030 strategy aims to mobilize the corporate sector to support equitable WASH access for more than 300 million people. WASH4Work initiative mobilizes businesses to address workplace WASH challenges. Net Positive Water Impact (NPWI) prioritizes equitable water access alongside water quantity and quality. Water Resilience Issue Brief prioritizes equitable water access in its definition of resilient water systems. Research includes: *Advancing Affordability through Water Efficiency* (2022); *At Risk: Public Supply Well Vulnerability* (2021); *Solutions for Underperforming Drinking Water Systems in California* (2020); *Financing Water Supply and Sanitation in a Changing Climate* (2020).



### TARGET 6.3: WATER QUALITY AND RECYCLING

Water efficiency and reuse work advances circular water management approaches, including reuse of wastewater. Water research and tools include *The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture* (2022); *Clearing the Waters: A Focus on Water Quality Solutions* (2010). Water quality prioritized in frameworks developed, including Net Positive Water Impact.

### TARGET 6.4: WATER EFFICIENCY & SUSTAINABLE WITHDRAWALS

Water efficiency and reuse work advances efficiency as a key component of resilient water systems. *The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture* (2022) found California could reduce urban water use by up to 48% through efficiency investments. Additional research includes *Advancing Affordability through Water Efficiency* (2022); *The Multiple Benefits of Water Conservation and Efficiency for California Agriculture*; *Potential Water Savings Associated with Agricultural Water Efficiency Improvements: A Case Study of California* (2011). Water efficiency prioritized in frameworks, including Net Positive Water Impact.

### TARGET 6.5: IWRM & TRANSBOUNDARY WATER

Developed and maintained Water Conflict Chronology, the world's most comprehensive open-source database on water-related violence. Additional research related to water conflict: *Ending Conflicts Over Water: Solutions to Water and Security Challenges* (2020); and *Understanding and Reducing the Risks of Climate Change for Transboundary Waters* (2009).

### TARGET 6.B: LOCAL PARTICIPATION

Water and Climate Equity initiative works to build local capacity. *Stakeholder Engagement Guide for Nature-Based Solutions* (2022) offers guidance for broad stakeholder engagement.

### TARGET 6.6: WATER-RELATED ECOSYSTEMS

Research and tools focused on ecosystems include: *Left Out in Drought: California Fish* (2022); NBS Benefits Explorer; *Benefit Accounting of Nature-Based Solutions for Watersheds* (2021); *Benefit Accounting of Nature-Based Solutions for Watersheds Landscape Assessment* (2020). Extensive ecosystem-related work in Colorado River Basin and Salton Sea. Ecosystems also prioritized in water resilience frameworks: Net Positive Water Impact (NPWI); Water Resilience Issue Brief; and Multi-Benefit Approach.



Recognizing agriculture uses about 70% of freshwater withdrawals globally, agriculture focused research includes *Water, Sanitation and Hygiene: Three Essential Ingredients to Resilient Agricultural Supply Chains* (2019); *Impacts of California's Ongoing Drought: Agriculture* (2015); *Water Risk Hotspots for Agriculture: The Case of the Southwest United States* (2016); and *Agricultural Water Conservation and Efficiency in California* (2014).



Long-standing work advocating for the Human Right to Water and equitable water access impacts girls and women, who are disproportionately charged with water collection globally.



Water-energy nexus research promotes integrated water and energy decision-making. Research and tools include *The Future of California's Water-Energy-Climate Nexus* (2021); *Water for Energy: Future Water Needs for Electricity in the Intermountain West* (2011); *Energy Down the Drain* (2004); Water-Energy Calculator (WECalc); and Water-Energy Simulator (WESim).



35-year history of research and advocacy related to sustainability equity and justice. Water and Climate Equity strategy addresses inequalities in the US. Water Resilience Coalition prioritizes reducing inequalities by investing in climate resilient WASH in its long-term 2030 strategy. Research include: *Customer Debt and Lost Revenue: The Financial Impacts of COVID-19 on Small Community Water Systems* (2021); *Water and the COVID-19 Pandemic: Equity Dimensions of Utility Disconnections in the U.S.* (2020); *Water and the Covid-19 Pandemic: Ensuring Access to Water as Shutoff Moratoriums Lift* (2020).



Water Efficiency and Reuse work addresses urban water resilience and climate adaptation of cities through circular water approaches. Research and tools include *The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture* (2022). Issued earliest warnings about sea-level rise risks to California's coastal cities.



Convening and mobilizing private sector on corporate water resilience. 2004 Pacific Institute report and groundbreaking 2007 assessment highlighted concerns that most large companies were not adequately reporting water risks and impacts to their stakeholders. CEO Water Mandate, partnership between Pacific Institute and UN Global Compact, endorsed by 238 companies that publicly commit to specific water stewardship practices. Water Resilience Coalition unites CEOs of more than 29 major companies with the shared vision of elevating global water stress to the top of corporate agendas and leading large scale collective action in water-stressed basins across multiple continents.



Provided early warnings of climate change impacts on water systems and proposed solutions for future water resilience. 2030 goal is to "catalyze the transformation to water resilience in the face of climate change." Work increasingly visible on the global climate policy stage, including UNFCCC COPs. Water Resilience Issue Brief prioritizes building water systems that can respond to the stresses and shocks of climate change. *Water Resilience Assessment Framework (WRAF)* provides a method to build long-term water resilience to mitigate and adapt to climate change. 2009 analysis one of the first to identify sea-level rise risks to California cities; became driver of policy change. 2021 report *The Future of California's Water-Energy-Climate Nexus* identifies specific water policies that could play an important role in helping meet energy and greenhouse gas emissions goals.



Nature-Based Solutions work scales uptake of NBS that support biodiversity and healthy ecosystems. NBS research and tools include: NBS Benefits Explorer, *Benefit Accounting of Nature-Based Solutions for Watersheds* (2021); *Benefit Accounting of Nature-Based Solutions for Watersheds Landscape Assessment* (2020). *Left Out in Drought: California Fish* (2022) recommends actions to protect fish during droughts. Frameworks prioritize biodiversity and ecosystems: Net Positive Water Impact; Water Resilience Issue Brief; Multi-Benefit Approach.



Water Conflict Chronology, the world's most comprehensive open-source database on water-related violence compiles data on more than 1,200 global water conflicts. *Ending Conflicts Over Water: Solutions to Water and Security Challenges* (2020) provides strategies to reduce water-related conflicts in key water-insecure hotspots around the world.



Convenes more than 270 multistakeholder partnerships including those with utilities, NGOs, businesses, governments, and others across the public and private sectors to advance water resilience. For example: California Water Action Collaborative (CWAC) unites 25 major NGOs, agricultural producers, responsible investors, environmental foundations, and companies to protect California water; active participant in California's Salton Sea Advisory Committee; CEO Water Mandate convenes more than 238 global business on water stewardship; and Water Resilience Coalition convenes 29 CEOs of world's largest companies and range of NGO partners to elevate water on corporate agendas.



YOUR SUPPORT MAKES IT POSSIBLE  
Together, We Shape the Future of Water Resilience

The urgent challenges of the global water crisis and its ties to climate change cannot be ignored. The Pacific Institute is positioned to scale water resilience and drive vital change. Hand in hand, we are gathering clear evidence and working on practical solutions through thorough research and innovative thinking. Our efforts aim to inform communities, guide leaders, and shape important policies. Financial support from individuals, businesses, and foundations gives momentum to our cause, helping us advance solutions to the world’s most pressing water challenges.

Ways to Give

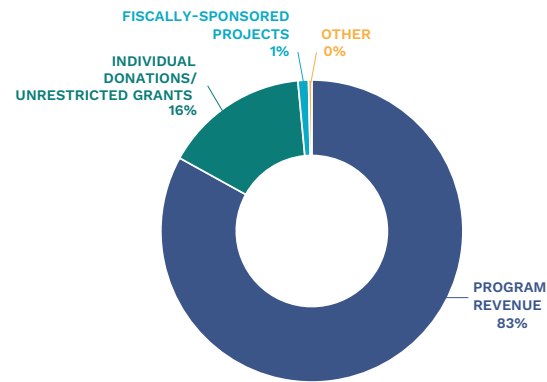
Gifts can be made online at [www.pacinst.org](http://www.pacinst.org)  
or by mail to:  
Pacific Institute  
344 20th Street, Oakland, CA, USA 94612  
Federal Tax ID #94-3050434

Thank you for investing in a water-resilient future.

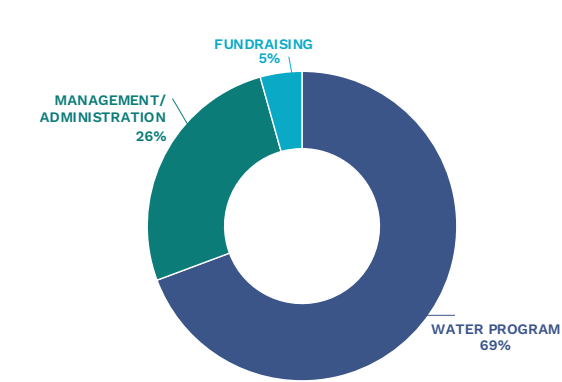
“I have personally lived under the specter of not enough water to support life. I support the Pacific Institute because their research focuses on water conservation and demand management to address both physical and economic water scarcity.”  
—Dawn Walker  
Pacific Institute Supporter

2022 Financials

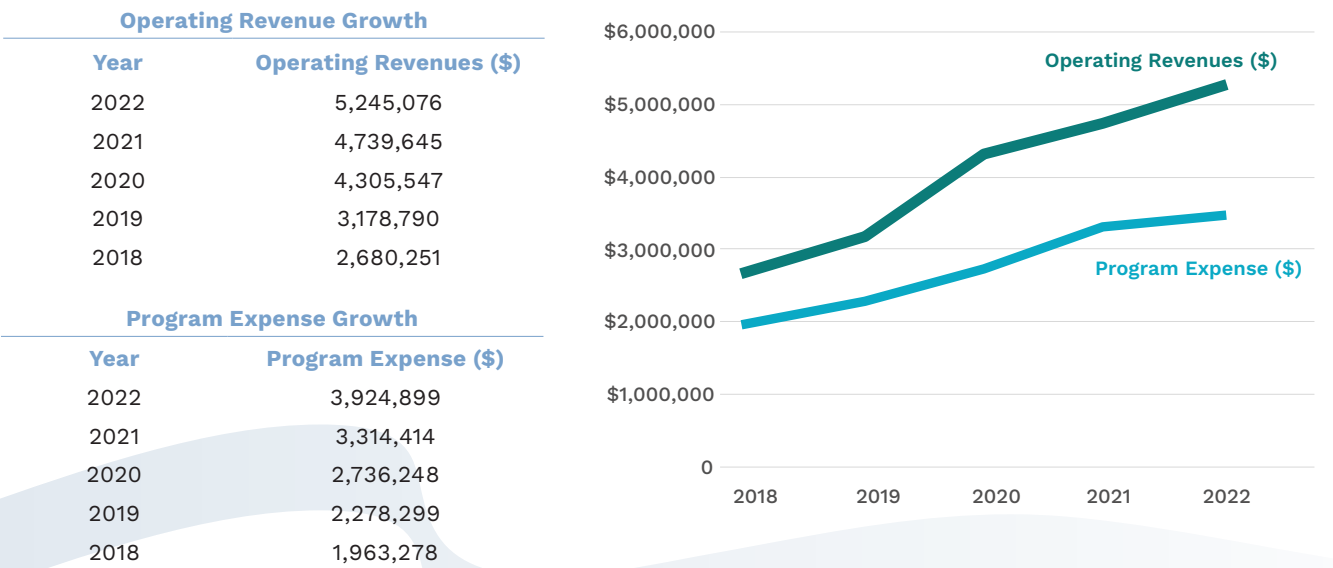
REVENUE	
Program Revenue	\$4,354,900
Individual Donations/ Unrestricted Grants	812,479
Fiscally-Sponsored Projects	59,164
Other	18,532
Total	\$5,245,076



EXPENSES	
Water Program	\$3,924,899
Management/ Administration	848,275
Fundraising	217,302
Total	\$4,990,476



FIVE-YEAR GROWTH IN REVENUE AND EXPENSES



FIVE-YEAR GROWTH IN STAFF

Year	No. of FTEs (beginning of year)	No. of FTEs (end of year)
2018	17.5	20.5
2019	20.5	21.5
2020	21.5	25
2021	25	28.5
2022	28	30





**PACIFIC INSTITUTE**

REIMAGINING WATER FOR A CHANGING WORLD

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