

LA COUNTY
WATER PLAN



LOS ANGELES COUNTY
WATER PLAN

2023 Edition | Water Supply Resilience

equity
sustainability
opportunity

local
water
resources
collaboration
relationships
regional
resilience

The County of Los Angeles recognizes that we occupy land originally and still inhabited and cared for by the Tongva, Tataviam, Serrano, Kizh, and Chumash Peoples. We honor and pay respect to their elders and descendants – past, present, and emerging – as they continue their stewardship of these lands and waters. We acknowledge that settler colonization resulted in land seizure, disease, subjugation, slavery, relocation, broken promises, genocide, and multigenerational trauma. This acknowledgment demonstrates our responsibility and commitment to truth, healing, and reconciliation and to elevating the stories, culture, and community of the original inhabitants of Los Angeles County. We are grateful to have the opportunity to live and work on these ancestral lands. We are dedicated to growing and sustaining relationships with Native peoples and local tribal governments, including (in no particular order) the

Fernandeño Tataviam Band of Mission Indians
Gabrielino Tongva Indians of California Tribal Council
Gabrieleno/Tongva San Gabriel Band of Mission Indians
Gabrieleño Band of Mission Indians - Kizh Nation
San Manuel Band of Mission Indians
San Fernando Band of Mission Indians

To learn more about the First Peoples of Los Angeles County, please visit the Los Angeles City/County Native American Indian Commission website at lanaic.lacounty.gov.

The Los Angeles County Water Plan (CWP) would not have been possible without the guidance, contribution, and support from numerous groups and individuals. Please see Appendix F for a full list of contributors.

DIRECTOR'S MESSAGE

As Director of Los Angeles County Public Works, it is my pleasure to introduce the Los Angeles County Water Plan (CWP), First Edition, an aspirational yet actionable blueprint for improving water resilience in our region.

This plan comes at a critical time. More frequent and intense wildfires; three years of drought followed by intense rainfall; and recently, tropical storm Hilary, the first such storm to make landfall in nearly 100 years, have all clearly demonstrated our region's vulnerability to the weather impact driven by climate change. Meanwhile, other significant stressors exist, and many are escalating, such as polluted groundwater basins, aging infrastructure, lack of access to safe, reliable, and affordable water supplies in vulnerable communities.

Water management in Los Angeles County is the responsibility of more than 200 agencies, yet there are many issues that are beyond the purview of individual agencies and should be addressed in a coordinated fashion at the countywide level. For this reason, dozens of water professionals, tribes, community leaders, and an array of diverse stakeholders came together to develop the CWP to articulate an ambitious, inclusive, and regional path to achieve water resiliency.

The CWP will not be a static document but a living roadmap that will be updated to address the evolving needs of our communities in future iterations.

Although circumstances will continue to change, a secure and equitable water future will require all involved to work together to adapt to our infrastructure and prepare our communities to be resilient and thrive.

Thank you for your continued partnership and commitment to fulfilling the vision of the Los Angeles County Water Plan.



Mark Pestrella, PE
Director of Public Works





LA COUNTY WATER PLAN EXECUTIVE SUMMARY

OUR ROUTE TO RESILIENCE, TOGETHER

Climate change is establishing a “new normal” of more frequent and intense droughts, as well as less frequent and more torrential rains. Recognizing a new climate reality and the need to be thoughtful stewards of future water supplies, the Los Angeles County Board of Supervisors envisioned the development of a countywide water plan focused on collaborative management of Los Angeles County’s water resources. Los Angeles County Public Works (Public Works) developed this Los Angeles County Water Plan (CWP), together with water resources organizations, and an array of diverse stakeholders, to secure Los Angeles County’s water future and achieve our collective vision of equitable and sustainable water resources for everyone. The CWP builds upon the 2019 OurCounty Sustainability Plan, establishing the path to realizing our vision that is rooted in cross-sector collaboration and coalition building.

VISION

The CWP articulates a shared, inclusive, regional path forward to sustainably and equitably achieve safe, clean, and reliable water resources for Los Angeles County.

SHARED OPPORTUNITIES FOR WATER RESILIENCE

THE CWP FOCUSES ON ACHIEVING REGIONAL WATER RESILIENCE THROUGH COLLABORATIVE STRATEGIES. Over 200 agencies in Los Angeles County manage a complex network of water systems to meet the needs of our communities and environment. To achieve sustainability, resilience, and equity, cross-sector teamwork and a holistic approach to best leverage natural systems and infrastructure are essential. This plan is a living document. The targets, strategies, and actions are a starting point in this effort.

The CWP is not intended to address every water-related issue in Los Angeles County. Instead, it builds upon and complements the many existing local and regional water planning efforts by focusing on four key focal areas where new or additional regional collaboration can add value. These four key focal areas were established through a gaps analysis, which included a review of local and regional planning documents, along with initial stakeholder discussions encompassing a variety of perspectives. For each of the four key focal areas, the CWP describes shared desired outcomes, identified by Public Works through discussions with numerous groups and individuals. During our gaps analysis, Public Works evaluated disparities in water resilience throughout the County and specifically selected a focal area to address a pressing need. The CWP provides an approach for achieving these desired outcomes through collaboration and a platform for measuring progress.

CWP Four Key Focal Areas



REGIONAL WATER SUPPLY RELIABILITY

Improving regional water supply reliability by better leveraging our collective local and imported water resources and infrastructure.



GROUNDWATER MANAGEMENT AND QUALITY

Realizing our shared groundwater management opportunities by sharing expertise and resources to overcome challenges.



SMALL, AT-RISK SYSTEM RESILIENCE AND DRINKING WATER EQUITY

Ensuring a consistently high standard of water service for everyone in Los Angeles County by providing regional support for small systems, with focused attention to under-resourced communities.



WATERSHED SEDIMENT MANAGEMENT

Mitigating the impacts of wildfire on our water supplies through coordinated efforts between land and water managers.

REGIONAL STRATEGIES, REGIONAL BENEFITS

The CWP is organized around a framework of targets and strategies, which are supported by specific actions. Targets measure collective progress toward the shared desired outcomes for the key focal areas of the CWP. These targets are intended to help Los Angeles County achieve regional water resilience by 2045. See Chapter 2 for more on targets. Public Works will publish an interactive dashboard to track progress toward these targets. Strategies provide the overarching approaches to achieving the targets. Actions support the strategies and include specific steps to drive results, along with timing, responsible agencies, and potential participants.

Strategies for a Resilient Water Future



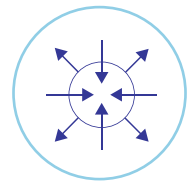
STRATEGY 1

Achieving the most efficient water use possible countywide



STRATEGY 2

Collaborating on consistent drought preparedness and response messaging



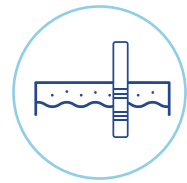
STRATEGY 3

Coupling local supply development with regional conveyance



STRATEGY 4

Managing salt and concentrate regionally



STRATEGY 5

Leveraging regional groundwater storage potential



STRATEGY 6

Collaborating on water quality needs and treatment technologies



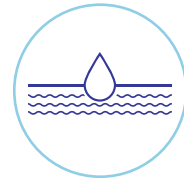
STRATEGY 7

Enhancing cost-effectiveness of pumping and treating impaired groundwater



STRATEGY 8

Protecting coastal groundwater basins from seawater intrusion



STRATEGY 9

Facilitating regional groundwater recharge understanding and initiatives



STRATEGY 10

Facilitating natural infiltration of precipitation



STRATEGY 11

Providing regional support for small, at-risk water systems



STRATEGY 12

Mitigating wildfire effects on water supply and quality



STRATEGY 13

Managing invasive species in riparian areas



STRATEGY 14

Facilitating sediment management and debris removal from flood control facilities

VALUES GUIDING FUTURE ACTION

At the onset of CWP development, Public Works proactively reached out to a diverse group of stakeholders to understand what matters to them. We identified several broad, overarching values for the CWP through these conversations. Some of these values provided core tenets to our overall process for preparing the CWP. Others guided us in establishing targets, strategies, and actions. Other values, while not directly addressed through the actions in the CWP, will continue to inform how water resource management is approached to achieve sustainable and equitable outcomes. Each of these values will guide future iterations of the plan, as well as steps taken throughout CWP implementation.

These values are aligned with LA County's Anti-Racism, Diversity, and Inclusion (ARDI) Initiative, which aims to guide the County by offering training and capacity building; technical assistance and planning; policy analysis and development; data collection; analysis and reporting; community, tribal, and other stakeholder engagement; and equity-infused resourcing and programming to help reach its goals.

CWP VALUES

- Strive for equitable benefits and impacts of water resource management decisions
- Ensure inclusive, diverse, multigenerational, and sustained tribal and community engagement
- Use data to inform policies, priorities, and practices
- Encourage multi-benefit projects and green infrastructure
- Promote capacity building of a local, skilled workforce
- Incorporate tribal knowledge into water management
- Integrate the knowledge and experiences of local communities in water planning
- Ensure CWP is actionable and adaptable
- Address climate resiliency
- Establish clear communications (outline priorities, listen, incorporate feedback, maintain dialogue)
- Implement vegetated/nature-based solutions



The CWP outlines a path to achieve a resilient water future for all Los Angeles County residents. Everyone has a role in successfully realizing the CWP. By working across County departments and with other partners, actively engaging Tribes and other stakeholders, seeking funding to support CWP implementation, and tracking and reporting on progress, we are committed to facilitating the ongoing collaboration that is core to making the CWP successful.

CENTRAL THEMES FOR A PATH AHEAD

To lead the way on regional initiatives, the CWP was developed with resilience, equity, sustainability, and engagement as central themes. These themes will guide CWP implementation and its future iterations to create reliable water resources for all communities in Los Angeles County.

RESILIENCE

Water resilience refers to the capacity of communities and the environment to adapt to changes in the availability of water resources resulting from extreme and shifting weather patterns, as well as other stressors.

EQUITY

Water equity entails ensuring that all people and communities can depend on water management institutions and infrastructure to provide equal access to clean, safe, high-quality, and affordable water.

SUSTAINABILITY

Sustainable water management involves using water resources in a manner that fulfills current ecological, social, and economic needs without compromising the ability to meet those needs in the future.

ENGAGEMENT

Engagement means actively reaching out to and collaborating with a diverse and representative range of stakeholders to develop and implement water management policies and programs.

A FORWARD-LOOKING LIVING DOCUMENT

THE CWP IS A LIVING DOCUMENT. This inaugural 2023 Edition of the CWP marks the first iteration for this regional planning effort and focuses on water supply resilience. As a living document, future iterations of the CWP are intended to evolve and adapt to meet Los Angeles County's changing water resources needs.

WHAT IS IT? The CWP is a forward-looking strategic plan that crafts a vision for the region's water resources management. The CWP articulates strategies to align efforts both small and large in order to launch Los Angeles County on a successful path towards water supply resilience.

WHO IS IT FOR? Water knows no city or county boundaries. The CWP is a plan for the County region as a whole, not a single locality or governing body. The CWP was developed to serve – collaboratively with local agencies and stakeholders – the people and communities of Los Angeles County.

THE CWP FILLS CURRENT GAPS TO ENHANCE THE REGION'S WATER RESILIENCE. Recognizing that there are so many ambitious efforts already underway in Los Angeles County, the CWP takes a bird's-eye view on what else can be done to optimize, leverage, and align programs and processes. While the CWP does not attempt to reinvent the wheel or address every water-related issue, it complements existing efforts and fills in the gaps for matters not currently being addressed at a regional level. The CWP does not address activities best managed at the Federal, State, or local levels, nor does it recommend specific projects subject to environmental analysis or duplicate other ongoing efforts. As a strategic plan, the CWP does not supersede land use plans that have been adopted by the Board of Supervisors.

LA COUNTY
WATER PLAN

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CHAPTER 1 ACHIEVING REGIONAL WATER RESILIENCE THROUGH COLLABORATION

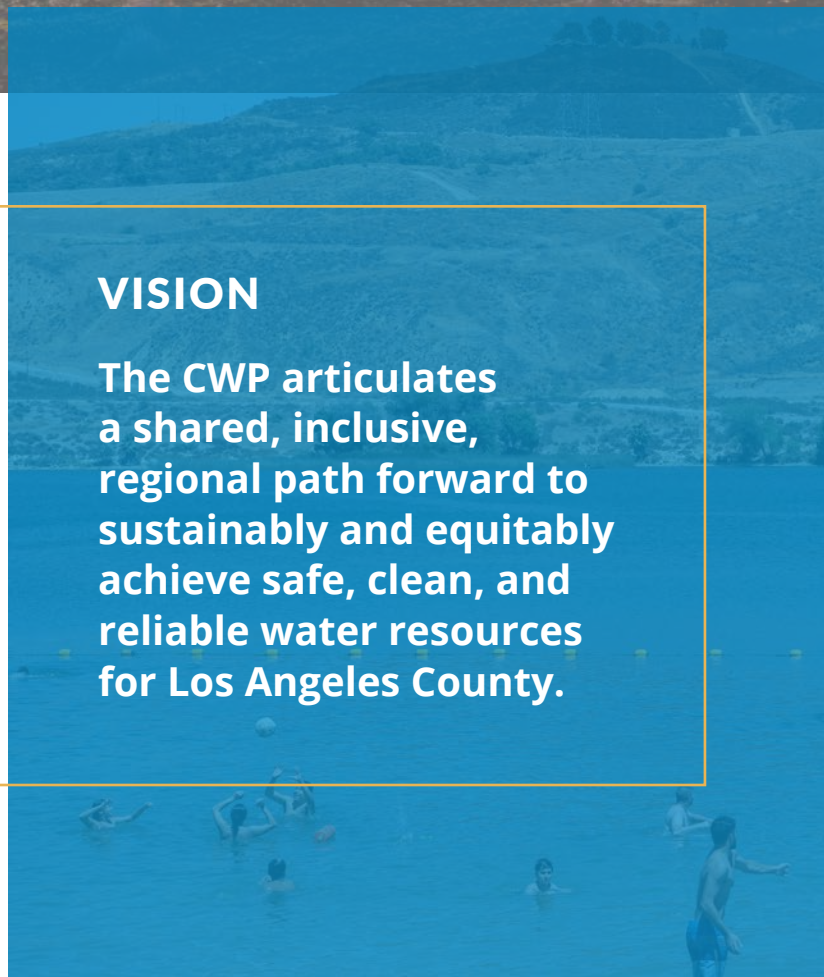
The Los Angeles County Water Plan (CWP) focuses on achieving countywide water resilience through collaborative strategies. Over 200 agencies manage a complex network of water systems to meet the needs of our communities and environment. Cross-sector teamwork and a holistic approach to best leverage natural and engineered systems are essential to achieve safe, clean, and reliable water resources for the present and future generations of Los Angeles County. This chapter provides the vision for the CWP, along with an overview of the CWP development process and outcomes.

VISION

The CWP articulates a shared, inclusive, regional path forward to sustainably and equitably achieve safe, clean, and reliable water resources for Los Angeles County.

While the opportunities for more effective water management are great, water resources in Los Angeles County are becoming increasingly stressed. Climate change is establishing a “new normal” of more frequent and intense droughts, coupled with less frequent but more torrential rains. Groundwater basin levels are declining, and some of our most under-resourced communities do not have equitable access to consistently reliable, high-quality drinking water. California wildfires, sometimes fueled by invasive species, can impact water supplies and water quality. At the same time, water management in Los Angeles County is already rapidly evolving to address many of the region’s most pressing water issues. **Water agencies throughout Los Angeles County are working to solve these challenges. Regional programs that capture stormwater or produce recycled water are contributing significantly to the region’s objectives. Recognizing the value in working together, these agencies are eager to collaborate with each other, Tribes, and other stakeholders to develop integrated programs and projects that provide innovative solutions to complex problems.**

In 2016, in the face of a new climate reality and recognizing the need to be thoughtful stewards of water supplies, the Los Angeles County Board of Supervisors called for the articulation of specific actions to secure Los Angeles County’s water future. Public Works—as a regional entity with integrated interests—is well-positioned to facilitate countywide coordination to enhance water resilience, building upon the cross-sector collaboration from the OurCounty Sustainability Plan. Working together with water resources organizations and a diverse array of stakeholders in Los Angeles County, we developed this CWP to achieve our collective vision of equitable and sustainable water resources for everyone.



Castaic Lake: Clean water and healthy watersheds are vital resources to Los Angeles County residents

All residents of Los Angeles County, present and future generations, deserve safe, clean, and reliable water resources

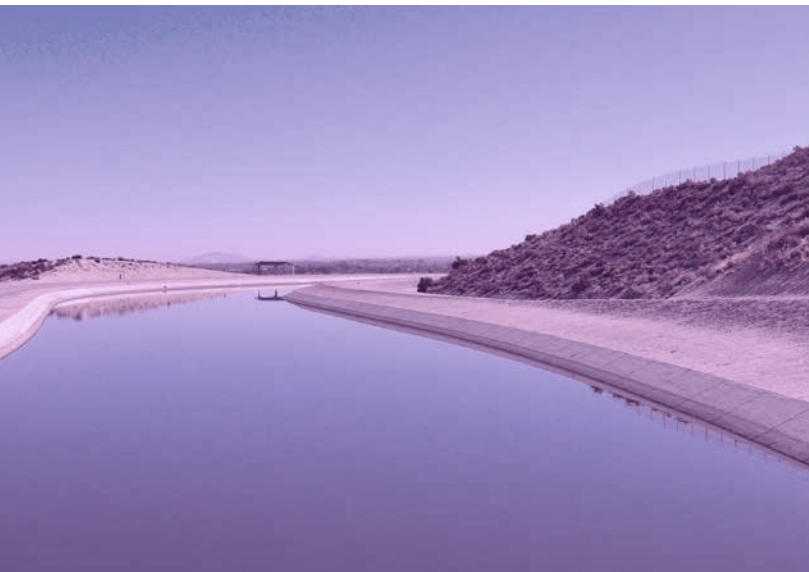
ESTABLISHING FOCAL AREAS

Since water resilience is of shared interest across agencies and communities, planning for our future water resources is a shared responsibility. Working together with water resource managers and diverse stakeholders in Los Angeles County, we developed the CWP to complement and support existing local and regional plans, programs, and projects. As a result, this initial edition of the CWP focuses on making progress within four key areas where additional collaboration would be most beneficial. Since the CWP is a living document, future iterations may focus on additional or different issues as water resource planning needs in Los Angeles County continue to evolve.

Key water management areas supported by the CWP but more explicitly addressed within other ongoing efforts include:

- **Stormwater management:** Developing and implementing stormwater capture projects that improve water quality, increase water supply, and enhance communities is the focus of the Safe, Clean Water Program - which provides funding for both regional and local concepts.
- **Regional recycled water programs:** There are several large-scale partnership programs underway (such as the Metropolitan Water District of Southern California's and Los Angeles County Sanitation District's Pure Water Southern California Program) that will maximize recycled water production for use to offset imported water.
- **Groundwater basin projects:** There are a variety of projects within individual basins across the County to enhance recharge and increase production through enhanced treatment (such as the Los Angeles Department of Water and Power's San Fernando Groundwater Basin Remediation Program).
- **Integrated flood management:** In addition to local drainage and regional flood control plans and operational policies, there are several integrated planning efforts with concepts that will maintain flood control while introducing additional benefits (e.g., LA River Master Plan).
- **Land stewardship:** Understanding the importance of the nexus between water and land management, the CWP recognizes the network of ongoing urban land use, forest, and watershed stewardship efforts conducted by planning agencies and entities throughout Los Angeles County.

REGIONAL WATER SUPPLY RELIABILITY



To address climate change impacts on future water supply reliability, managers should take a regional and integrated view of the existing networks of natural and engineered system that are available to convey supplies across Los Angeles County. Thinking beyond singular facility function and jurisdictional boundaries will allow the region to better leverage collective local and imported water resources, infrastructure, and relationships to improve regional water supply reliability.

GROUNDWATER MANAGEMENT AND QUALITY



Given that nearly all of Los Angeles County's groundwater basins are managed through adjudication agreements, information sharing is often separated by basin which can limit opportunities for collaboration. Facilitating regional discussions that leverage collective expertise and resources can benefit Los Angeles County as a whole, but especially areas with under-resourced communities, by working together to address shared challenges across groundwater basins.

SMALL, AT-RISK SYSTEM RESILIENCE AND DRINKING WATER EQUITY



Small water systems play a key role in providing water supply to communities in Los Angeles County, but some small systems are particularly at risk due to a variety of circumstances including aging or inadequate infrastructure and lack of funding, especially within under-resourced communities. Regional support for small systems can ensure that a consistently high standard of service is achieved and maintained throughout Los Angeles County.

WATERSHED SEDIMENT MANAGEMENT



The increase in frequency and intensity of wildfires within Los Angeles County has both direct and indirect impacts on water infrastructure, water supply, quality, and infrastructure. Land and water managers, together, can mitigate wildfire potential and manage the impacts from post-fire rainfall events to improve the resilience of our water supply and infrastructure.

CWP STRUCTURE

The CWP is organized around regional targets for water resilience, along with strategies and actions to support progress on these targets. The targets, strategies, and actions and their respective roles in addressing the CWP’s focal areas are defined below.

Targets:

Targets provide a quantitative representation of shared desired outcomes for regional water resilience across Los Angeles County by 2045. Targets are intended to be met through CWP strategies and actions along with other local and regional efforts. These targets provide a metric to measure and track progress implementing the CWP. A detailed discussion of target development and analysis can be found in Appendix B.

Strategies:

Fourteen overarching strategies provide regional, collaborative approaches to achieving the targets. The strategies can be implemented through the CWP directly or indirectly through acknowledgement or support of other programs and planning efforts that have a shared purpose. More information on related planning efforts is available in Appendix C.

Actions:

Actions include specific steps that can be carried out, through an ongoing CWP implementation process, to support the strategies. As many of the larger actions may require several interim steps to be completed, the CWP contains a two-year Action Plan (Appendix A). The Action Plan provides further specificity for potential next steps that can be used to advance the discussion of implementation and corresponding resources.

Equation for a Resilient Water Future

$$\text{CWP Strategies \& Actions} + \text{Other Local and Regional Efforts} = \text{CWP Targets}$$

VALUES GUIDING FUTURE ACTION

At the onset of CWP development, Public Works proactively engaged a diverse group of stakeholders to understand what matters to them. We identified several broad, overarching values for the CWP through these conversations. Some of these values provided core tenets to our overall process for preparing the CWP. Others guided us in establishing the targets, strategies, and actions. Other values, while not directly addressed through the actions in the CWP, will continue to inform how the CWP is implemented.

Although these values are not explicitly referenced within every target, strategy, and action, they are fundamental to the plan as a whole and will continue to guide future iterations of the plan, as well as steps taken throughout CWP implementation.

These values are aligned with LA County’s Anti-Racism, Diversity, and Inclusion (ARDI) Initiative, which aims to guide the County by offering training and capacity building; technical assistance and planning; policy analysis and development; data collection, analysis and reporting; community, tribal, and other stakeholder engagement; and equity-infused resourcing and programming to help reach its goals.

CWP VALUES

- Strive for equitable benefits and impacts of water resource management decisions
- Ensure inclusive, diverse, multigenerational, and sustained tribal and community engagement
- Use data to inform policies, priorities, and practices
- Encourage multi-benefit projects and green infrastructure
- Promote capacity building of a local, skilled workforce
- Incorporate tribal knowledge into water management
- Integrate the knowledge and experiences of local communities in water planning
- Ensure CWP is actionable and adaptable
- Address climate resiliency
- Establish clear communications (outline priorities, listen, incorporate feedback, maintain dialogue)
- Implement vegetated/nature-based solutions

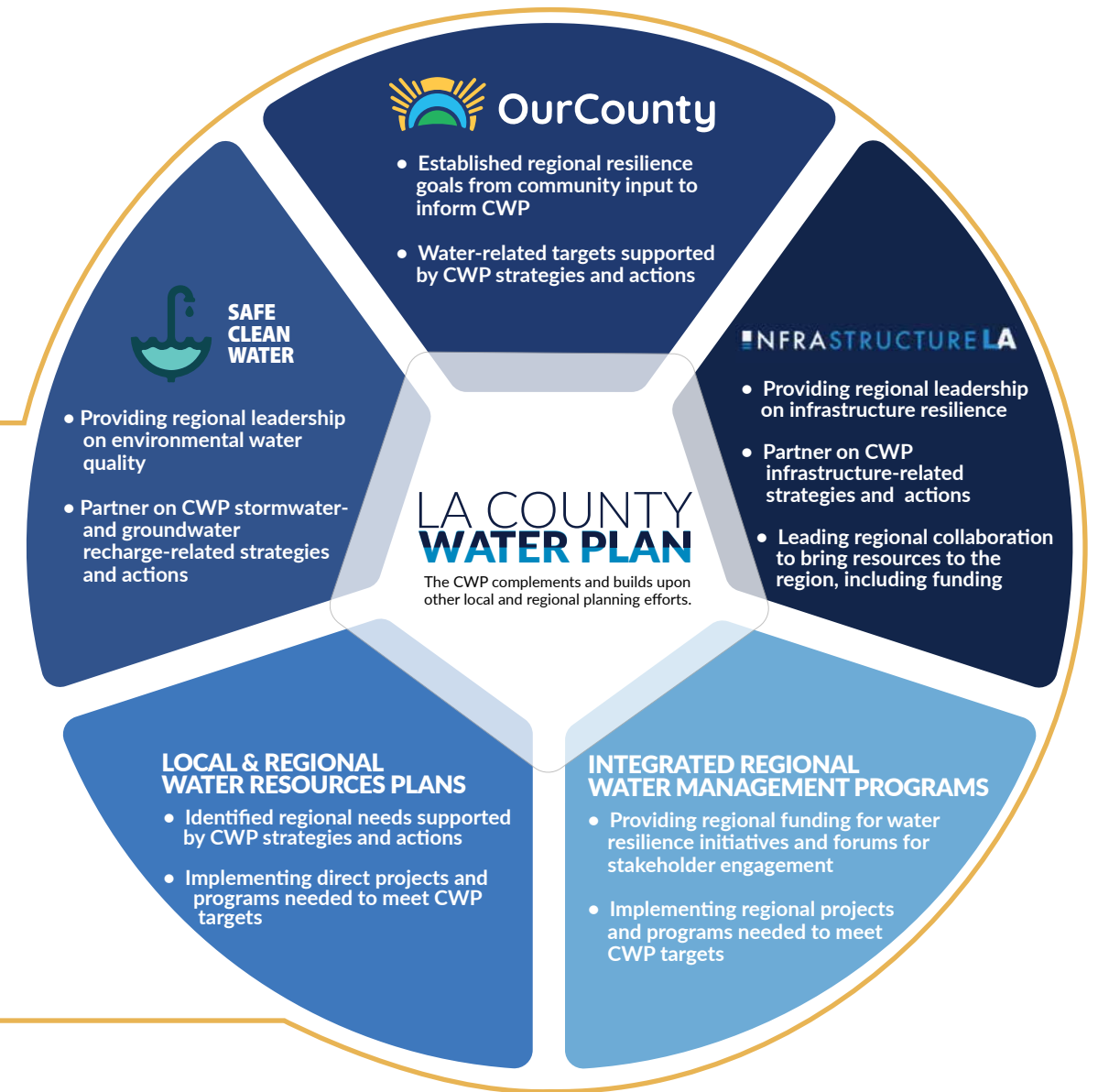
WORKING TOGETHER TO DEVELOP THE CWP

Building on the foundation of the OurCounty Sustainability Plan, the CWP was developed through a series of dialogues with nearly 100 water management agency representatives, Tribes, non-governmental organizations, local governments, and other stakeholders. After first defining the collective needs and desired outcomes for our region's water resilience, stakeholders progressed from development of targets, to strategies, and finally, to a specific, implementable two-year Action Plan. The CWP was subject to an extensive public review process which helped shape this final document. Details on the meetings and workshops that supported CWP development are provided in Appendix D.

Identifying priorities

Prior to beginning CWP development, a gaps analysis was performed to understand which water resource needs in Los Angeles County are not currently addressed in other planning initiatives. This initial step included a review of regulatory, local, and regional planning documents (much of which was conducted on a watershed scale), and State and Federal legislation. To better understand regional priorities, initial discussions were held with stakeholders representing various perspectives. This gaps analysis provided diverse viewpoints on water management challenges, initiatives, local planning efforts, and participation in the development of the CWP from entities throughout Los Angeles County, including the Santa Clarita Valley, Antelope Valley, and Greater Los Angeles area.

Previous work done through the Integrated Regional Water Management (IRWM) process informed much of the discussion including an understanding of existing local efforts that support equitable and sustainable water resources. The gaps analysis also considered input received during the OurCounty and the Safe, Clean Water Program initiatives. Significant recycled water programs are being spearheaded by agencies including the City of Los Angeles, Metropolitan Water District of Southern California, Los Angeles County Sanitation Districts, Las Virgenes Municipal Water District, and Santa Clarita Valley Water Agency. We will be building off the work they are doing to further regional collaboration that has already begun through these programs.



Establishing targets, strategies, and actions

Targets, strategies, and actions were developed through an iterative process, with multiple groups contributing ideas and building upon concepts identified by one another through a series of 45 workshops and listening sessions. Facilitated dialogue in workshop-style settings enabled content to be developed through discussion with stakeholders across multiple sectors. The CWP benefited from broad input across interests and geographies by partnering with the three IRWM regions in Los Angeles County and using their meetings to workshop ideas and concepts. Feedback received through other regional efforts, such as the Safe, Clean Water Program and OurCounty Sustainability Plan, also informed the CWP development. In addition to the workshops, many meetings were held with Tribes, environmental and environmental justice organizations, water management entities, local governments, and other stakeholders across Los Angeles County. The workshops and other meetings helped to develop targets, identify regional strategies, and create a realistic action plan. The workshops and other meetings also provided opportunities for stakeholders to express their interest in participating in CWP implementation.



CHAPTER 2 TARGETS FOR A RESILIENT WATER FUTURE

CWP targets reflect shared desired outcomes for regional water resilience across Los Angeles County by 2045. Meeting these targets relies on successful implementation of both local and regional efforts, projects, and programs, including many efforts led outside of the CWP. Guided by implementable two-year action plans, CWP strategies and actions will support progress in achieving the targets. The targets were developed to enable future progress tracking that leverages existing and easily reportable data sources in addition to any new information on benefits provided by stakeholder projects.

Targets that were meaningful and measurable were identified through the CWP planning effort. The resulting targets within each of the four focal areas are presented in this chapter with corresponding metrics and background context. Further details as to how each individual target was developed and how it will be tracked are included in Appendix B.

When stakeholders were asked their desired outcomes for future water resilience, some examples they gave were:

- “Equity, affordability and resilience”
- “Ability to withstand droughts”
- “Better connectivity between isolated systems”
- “Reduce fire-related damage”
- “Understanding of opportunities for partnerships”
- “Regional forum to discuss common concerns, issues, opportunities”

MEANINGFUL TO REFLECT DESIRED OUTCOMES

Within each of the focal areas, we asked the question “What are our desired outcomes for future water resilience?” Targets were formed to provide a meaningful yet quantifiable expression of those strongly- and commonly-held desired outcomes. Targets are intended to be countywide or regional.

As an example, targets developed for the Regional Water Supply Reliability focal area reflect more than the desire to fully leverage local supply potential across Los Angeles County. They were also selected to provide regional consistency in how we address water use efficiency, drought, and emergency response.

Targets reflect desired outcomes in each of the four CWP focal areas



REGIONAL WATER SUPPLY RELIABILITY



GROUNDWATER MANAGEMENT AND QUALITY



SMALL, AT-RISK SYSTEM RESILIENCE AND DRINKING WATER EQUITY



WATERSHED SEDIMENT MANAGEMENT

MEASURABLE FOR FUTURE TRACKING

To ensure that progress in achieving CWP targets was trackable, a numeric element was added to each target concept. The numeric element was developed by first defining the current (or baseline) conditions and building upon the baseline to set an achievable goal by 2045. Sources and methods for acquiring data that can be used to track measurable progress toward that number were also considered. As an example, the targets created for the Groundwater Management and Quality focal area establish volumetric goals for both groundwater production and recharge that build upon current baseline levels. These targets were specifically selected to leverage data and information regularly reported through adjudication and/or other management frameworks.

How target can be quantified	How data will be collected	How target will be tracked	How data will be processed
TYPE	DATA SOURCE	METRIC	CALCULATION

We used a four-step process to develop both meaningful and measurable targets. Further details are provided in Appendix B.



REGIONAL WATER SUPPLY RELIABILITY TARGETS

- A** Achieve 100% compliance with State Urban Water Use Objectives
Metric: Percent of suppliers that are meeting their State Urban Water Use Objective
- B** Increase local supply sources by 580,000 AFY
Metric: Total water supply that is sourced within Los Angeles County
- C** Meet 100% of water demands even in times of drought
Metric: Percent of water agencies that do not require Water Shortage Contingency Plans be implemented higher than Level 1
- D** Maximize ability to meet health and safety needs following an emergency by maintaining access to six months of emergency supply
Metric: Percent of water agencies that have access to six months of water supply for an emergency



GROUNDWATER MANAGEMENT AND QUALITY TARGETS

- E** Optimize production of groundwater by maintaining at least 700,000 AFY baseline groundwater production
Metric: Average annual countywide AFY of groundwater production
- F** Optimize production of groundwater by increasing production in areas overlying impaired groundwater by 18,000 AFY
Metric: Average annual production from new treatment projects, wells brought back online, and new wells (AFY)
- G** Increase groundwater recharge and storage by enhancing regional facility recharge by 250,000 AFY
Metric: Average annual countywide AFY of groundwater recharge at existing and future facilities/spreading grounds
- H** Increase groundwater recharge and storage by increasing decentralized infiltration by 80,000 AFY
Metric: Average annual countywide AFY of groundwater recharge outside of existing and future facilities/spreading grounds

Providing reliable water supplies in drought conditions is an increasing challenge across Los Angeles County. The CWP defines water supply reliability as the ability to meet current and future needs 100% of the time, including during emergencies. The CWP targets indicate the desire for increases in water conservation and efficiency as well as the further development of local supplies to improve resilience in the face of both longer-term droughts as well as near-term emergencies.

The targets reflect an alignment with the upcoming State Water Use Objectives, which are being developed by the State Water Resources Control Board (SWRCB) and will be released after this initial iteration of the CWP. Although imported water will play a vital role in Los Angeles County in the foreseeable future, increasing local sources of water promotes water supply diversity, autonomy, and reliability as well as long-term drought resilience. In addition, water use efficiency and local supplies provide environmental benefits by reducing energy consumption and improving local water quality as well as increasing local workforce. Near-term emergency resilience is equally important and greatly enhanced by maintaining sufficient levels of locally-developed and stored supplies throughout the County.

Groundwater basins provide a critical source of local supply along with seasonal and annual storage that can be accessed during drought conditions. The ability to fully maximize groundwater basin potential for both supply and storage can be constrained by water quality regulations, sea level rise, poor water quality, and regulated remediation zones. While groundwater basins are managed in isolation of each other, these shared constraints can benefit from shared solutions. Unused local, impaired (or “stranded”) groundwater is poorer quality water that would require additional relatively cost-ineffective treatment and/or conveyance for beneficial use. Being able to further tap into and use localized areas of impaired groundwater would enhance regional resilience. Additionally, leveraging combined groundwater storage potential through enhanced groundwater recharge of local and imported water would improve local emergency, seasonal, annual, and long-term supply reliability.



SMALL, AT-RISK SYSTEM RESILIENCE AND DRINKING WATER EQUITY TARGETS



WATERSHED SEDIMENT MANAGEMENT TARGETS

I Reduce at-risk systems by 100%

Metric: Number of water systems classified as in the categories of failing, at-risk, or potentially at-risk

J 100% of water agencies, including those in severely disadvantaged communities, have affordable cost of water to meet health and safety needs

Metric: Percent of water agencies where the cost of water for health and safety (6,000 gallons) does not exceed 2.5% median household income of severely disadvantaged communities

M Reduce fire-contributing species in riparian areas by 2,900 acres

Metric: Acres of riparian areas that have undergone at least one invasive species removal program

N Reduce human-caused ignitions by 50%

Metric: Count of fire ignitions in wildlands, rural, and the wildland-urban interface

K Reduce color, taste, and odor drinking water quality issues by 50%

Metric: Number of customer complaints per 1,000 connections about color, taste, and/or odor

L Maximize ability to meet health and safety needs following an emergency by confirming 100% of small community water systems have access to alternative sources of supply

Metric: Percent of small community water systems that have access to at least one other secondary water supply

O Maintain a minimum of 75% average available capacity in debris basins and 80% average available capacity in reservoirs

Metric: Percent of available capacity in debris basins and percent of available capacity in reservoirs

P Confirm 100% of water management agencies within the wildland-urban interface are implementing a wildfire resilience or mitigation plan

Metric: Percent of agencies that have implemented fire prevention measures and percent of agencies that have alternative or backup energy supply

With over 200 water supply entities in Los Angeles County of various sizes and supply portfolios, not all systems are able to provide consistently high quality, reliable drinking water to their customers. Many small and at-risk systems provide water to under-resourced communities and have limited resources and revenue potential to address water quality and quantity needs. While recognizing the differing costs of water by source, these targets aim for improvement in the availability and affordability of water supply across Los Angeles County. Although maximum contaminant levels are seldom exceeded for primary regulated constituents, there are several areas that regularly experience color, odor, and taste issues. Customer satisfaction is a fundamental part of equitable water delivery and every resident in Los Angeles County should have access to high quality, clean water for drinking, bathing, and other household uses. Additionally, many smaller, at-risk systems have only one source of supply and have no real options if that source becomes impaired or is interrupted during an emergency. For these systems an intertie or connection to alternative sources of supply is essential.

Wildfire frequency, intensity, and rate of spread have increased within the wildland-urban interfaces in Los Angeles County. These events create direct impacts to local water resources through destruction or impairment of water supply and wastewater infrastructure, and indirect effects on surface water quality and watershed functionality. In addition, post-wildfire impacts such as erosion and debris flows on watersheds lands can create flood management emergencies as well as long-term reduction in debris basin functionality, reservoir storage, and groundwater recharge potential. Reducing wildfire ignition sources and fire-contributing species that exacerbate wildfire impact are key areas to target for enhanced resilience. Furthermore, the ability to effectively manage existing flood control debris basins and reservoirs to their highest potential is critical to protecting the environment and communities and to maximizing stormwater capture during precipitation events. Water management agencies within wildland-urban interfaces need to be prepared for wildfire events and have plans in place for them to mitigate wildfire damage, respond during wildfire events, and minimize post-wildfire impacts.



CHAPTER 3 STRATEGIES AND ACTIONS FOR A RESILIENT WATER FUTURE

Fourteen CWP strategies have been developed to capitalize on the opportunities identified for further regional collaboration to meet the shared CWP targets. Each strategy presented in this chapter is supported by a suite of detailed actions that will be facilitated throughout CWP implementation. The strategies and actions are aligned with the CWP values which include ensuring inclusive, diverse, multigenerational, and sustained tribal and community engagement, and ensuring the CWP is actionable and adaptable. A table showing the alignment between CWP targets and strategies is provided at the end of this chapter. Collectively, these strategies and actions will help to meet multiple targets both directly and indirectly by leveraging resources across Los Angeles County that support and complement existing local and regional water resilience efforts, projects, and programs. These complementary and supported planning efforts are acknowledged in Appendix C.

Many of these strategies and actions will take time to fully realize but will provide interim benefits along the way. By continually identifying and taking near-term steps, we will facilitate consistent progress on targets, strategies, and actions. A two-year Action Plan, which identifies the steps and resources needed to implement actions within the current two-year period is included as Appendix A.

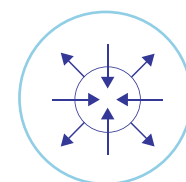
Strategies for a Resilient Water Future



STRATEGY 1
Achieving the most efficient water use possible countywide



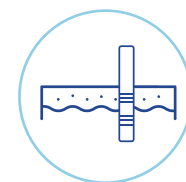
STRATEGY 2
Collaborating on consistent drought preparedness and response messaging



STRATEGY 3
Coupling local supply development with regional conveyance



STRATEGY 4
Managing salt and concentrate regionally



STRATEGY 5
Leveraging regional groundwater storage potential



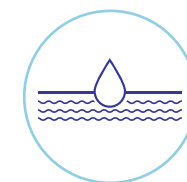
STRATEGY 6
Collaborating on water quality needs and treatment technologies



STRATEGY 7
Enhancing cost-effectiveness of pumping and treating impaired groundwater production



STRATEGY 8
Protecting coastal groundwater basins from seawater intrusion



STRATEGY 9
Facilitating regional groundwater recharge understanding and initiatives



STRATEGY 10
Facilitating natural infiltration of precipitation



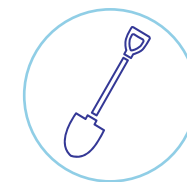
STRATEGY 11
Providing regional support for small, at-risk water systems



STRATEGY 12
Mitigating wildfire effects on water supply and quality



STRATEGY 13
Managing invasive species in riparian areas



STRATEGY 14
Facilitating sediment management and debris removal from flood control facilities

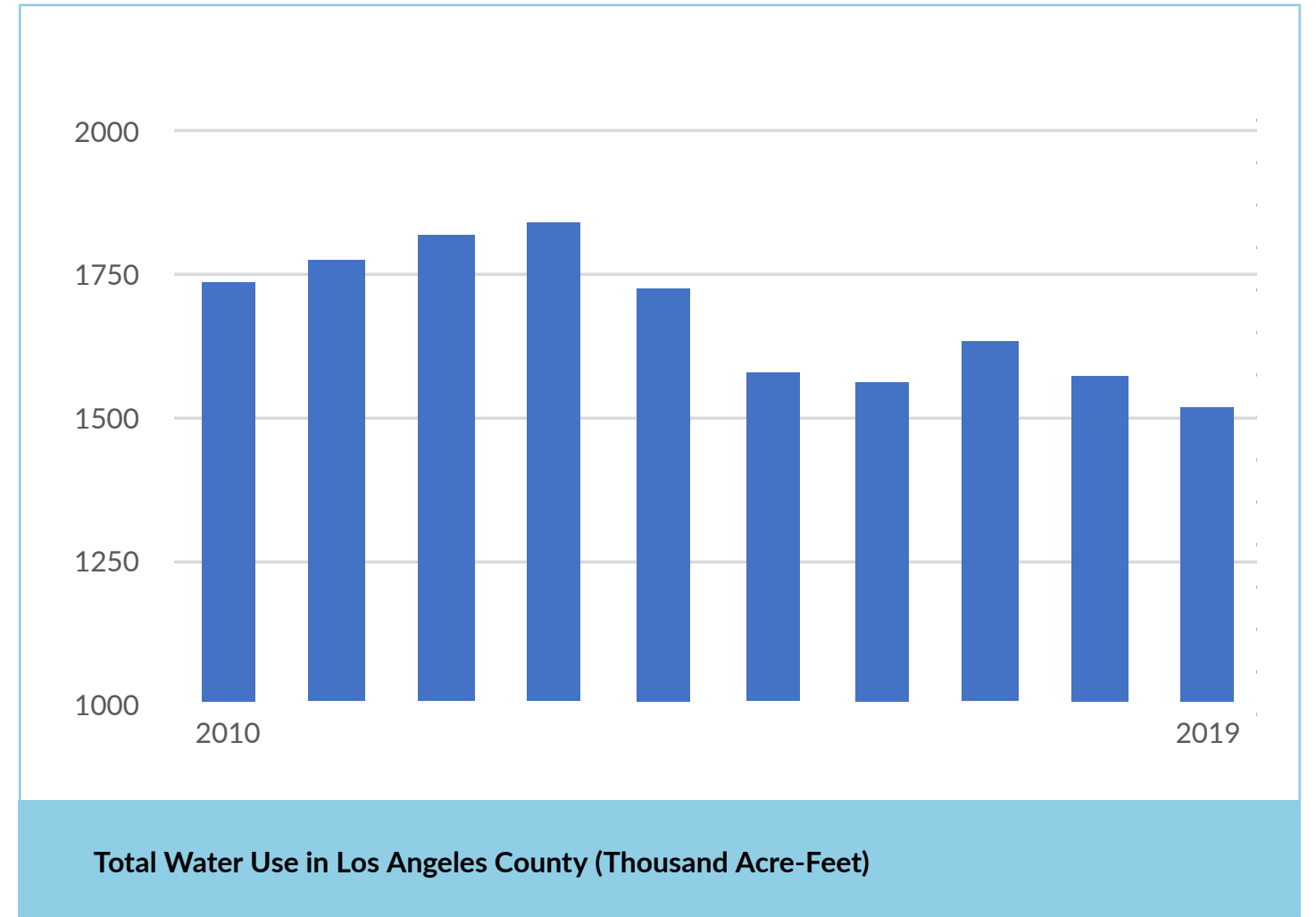


STRATEGY 1

Achieving the most efficient water use possible countywide

The State’s Urban Water Use Objectives (to be adopted by the SWRCB) are intended to establish a reasonable level of water use that will meet the unique demands within each of Los Angeles County’s over 200 urban water supplier service areas. The ability to achieve the new standards countywide would be greatly enhanced through regional collaboration that sets consistent expectations on water use efficiency throughout Los Angeles County, while accommodating the unique needs of diverse communities.

Why this strategy is needed



Los Angeles County has made significant strides in water use efficiency, reducing water use by approximately 13% since 2010 despite a 2% growth in population. Achieving the next level of efficiency to meet State objectives and improve resilience will require innovation and collaboration. In addition to improving water supply sustainability, using water efficiently also helps to improve water quality by reducing the amount of water that is conveyed and treated.

Actions to support this strategy

1.1 Facilitate universal access to Los Angeles Region Imagery Acquisition Consortium data sets to help urban water suppliers accurately estimate irrigable area and reasonable water use for their service area.

1.3 Provide access to Model Water Efficient Landscape Ordinance compliance training for all water suppliers in Los Angeles County.

1.2 Coordinate outdoor landscaping ordinances between cities, County, wholesalers, retail water agencies, and other local agencies (e.g., non-functional turf ordinances, Senate Bill 1383 mulch and composting, a trained workforce).

LA COUNTY WATER PLAN Target Link

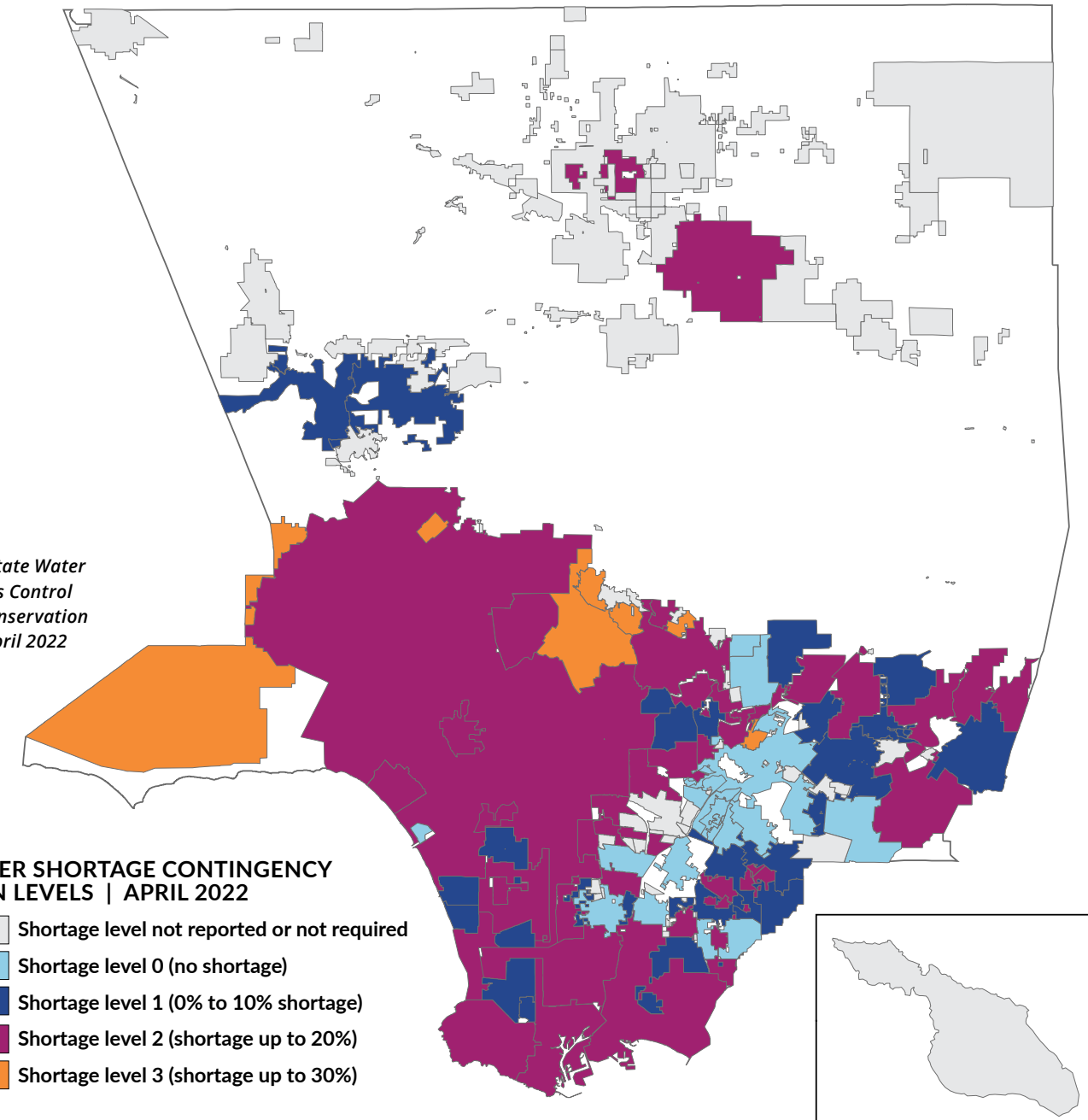
Facilitating access to water use efficiency data and training as well as ordinance coordination will help meet the target to **achieve 100% compliance with State Urban Water Use Objectives.**



Collaborating on consistent drought preparedness and response messaging

Given that people often live, work, and travel within different areas of Los Angeles County, speak different languages, and come from different cultures, collaboration between water agencies on messaging drought declarations and specific actions that the public can take to respond is critical in effectively preparing for and responding to aridification.

Why this strategy is needed



Source: State Water Resources Control Board Conservation Portal, April 2022

Variability in water supply conditions and shortage levels across the many water suppliers in Los Angeles County can create customer confusion and public messaging challenges.

Immediate public reduction in water use is the fastest way to respond to an existing drought; however, the opportunities to further reduce use in response to droughts becomes increasingly constrained as countywide normal water use efficiency continues to improve. Water supply agencies are finding it increasingly difficult to separate and elevate drought response messaging above regular messaging encouraging efficient water use as a way of life for Southern California. In addition, as shown in the above map, given the different water sources used by the over 200 water suppliers in Los Angeles County, there is often variability in drought conditions and associated public messaging that can create confusion for those living and working within different areas of the County.

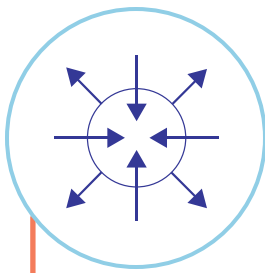
Actions to support this strategy

2.1 Collaborate on countywide drought response messaging that calls out steps that all water users in Los Angeles County can take, while directing the public to find the specific measures their water supplier is taking to respond to the local drought.

2.2 Expand upon ongoing efforts to create consistent messaging on the development of drought-resilient supplies.

LA COUNTY WATER PLAN Target Link

Improving regional drought messaging will help us collectively achieve our target to **meet 100% of water demands even in times of drought.**

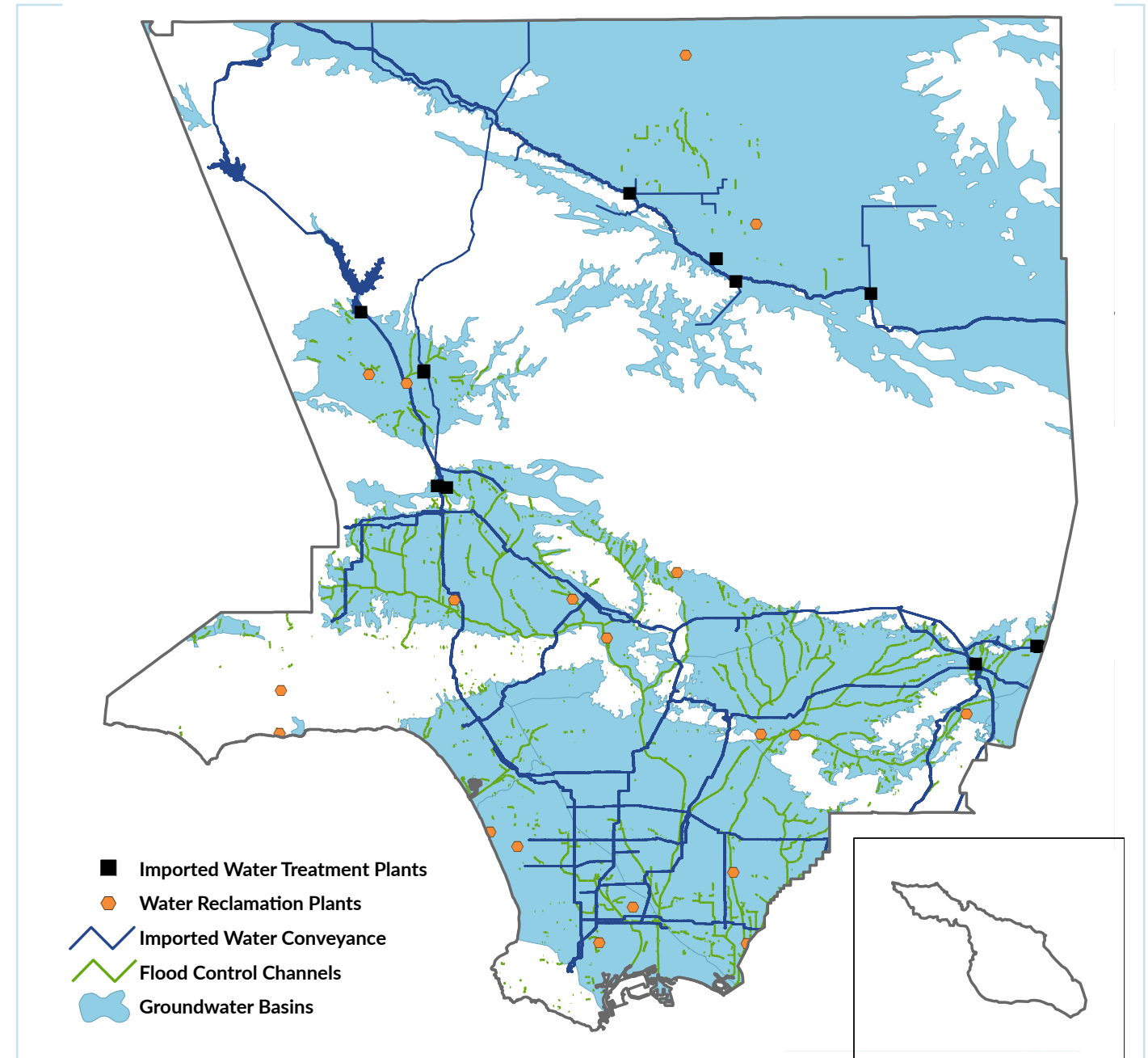


STRATEGY 3

Coupling local supply development with regional conveyance

Partnerships between agencies on local supply development and regional conveyance can increase the overall volume of local supply that can be used countywide, increase overall cost-effectiveness, and increase the potential for outside funding. Viewing and using existing water infrastructure networks in Los Angeles County as interconnected systems can provide opportunities, where appropriate, to better connect sources of supply to demands and/or storage. Examples of these types of efforts include regional recycled water programs and the Safe, Clean Water Program. This will improve regional reliability while also ensuring sustainable groundwater levels for communities that rely on local groundwater resources.

Why this strategy is needed



Los Angeles County has vast water infrastructure networks of conveyance and distribution systems, storage, and supply sources. Better connecting these networks can improve regional reliability.

The total amount of untapped local water supply potential in Los Angeles County is significant and could greatly reduce our dependence on imported water. Without economies of scale, stormwater and recycled water supply projects are often cost-prohibitive for individual water agencies to implement locally. While there has been great progress on advancing regional recycled water program concepts, there are further opportunities for collaboration on supporting local supply development for the benefit of the entire region through partnerships on regional conveyance and using existing infrastructure. Local supply development also offers opportunities for local projects that use our local workforce.

Actions to support this strategy

3.1 Explore options to improve feasibility of beneficial reuse of recycled water within the Antelope Valley and Upper Santa Clara River areas of Los Angeles County.

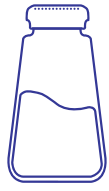
3.2 Encourage the use of Los Angeles County Flood Control District facilities to convey water supplies across Los Angeles County while mitigating known issues.

3.3 Promote use of smart technology (e.g., advanced metering infrastructure) to assess capacity and ability of wastewater systems to accept stormwater diversion flows in existing and planned infrastructure and to provide real-time controls and monitoring to more effectively conserve stormwater.

3.4 Promote use of both regional local supply development and distributed local supply development (e.g., cisterns, graywater systems in unsewered areas) and stormwater capture.

LA COUNTY WATER PLAN
Target Link

Connecting local supplies to local needs can provide alternative water supplies in alignment with the CWP target to **maximize ability to meet health and safety needs following an emergency by confirming 100% of small water systems have access to alternative sources of supply.**



STRATEGY 4

Managing salt and concentrate regionally

Regional cooperation is necessary to manage salt levels in our watersheds and groundwater basins. Concentrate management planning should accompany future regional recycled water program development. Collaboration with regulators to develop feasible options for regional concentrate management would help to maximize recycled water use as well as improve basin water quality.

Why this strategy is needed

Higher salinity levels in water is a result of industrial processing, groundwater cleanups, desalters, and purified water concentrate. Excessive salt limits a supply's beneficial use and can interfere with the operations of water and wastewater treatment plants. Concentrate, a byproduct of the advanced water treatment of groundwater and wastewater, is a commonly overlooked component of recycled water projects that can have significant ecological consequences and should be specifically considered for the planned expansion of regional recycled water programs in Los Angeles County.

Actions to support this strategy

4.1 Explore alternatives to restrictions on high total dissolved solids discharges to sewer systems and variable salinity water courses (e.g., Ballona Creek or Dominguez Channel), including measures to allow for salt cleanup projects and recover treatment costs for unavoidable salinity discharges (e.g., a salt surcharge).

4.3 Collaborate across water supply, groundwater cleanup, and recycled water programs to work with regulatory agencies on concentrate management permitting and regulations, across all areas of Los Angeles County.

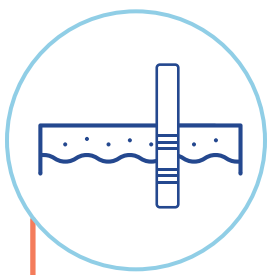
4.2 Explore development of regional conveyance for concentrates, including co-location of concentrate pipelines with regional recycled water conveyance pipelines, considering treatment, discharge permitting, and actual costs.

LA COUNTY WATER PLAN Target Link

Managing salt on a regional level, which is being done through Salt and Nutrient Management Planning efforts, will increase our ability to maximize recycled water for regional use and support the target to **increase local supply sources by 580,000 AFY.**



Brine from treatment processes is discharged to local evaporation ponds where salt is concentrated for disposal.

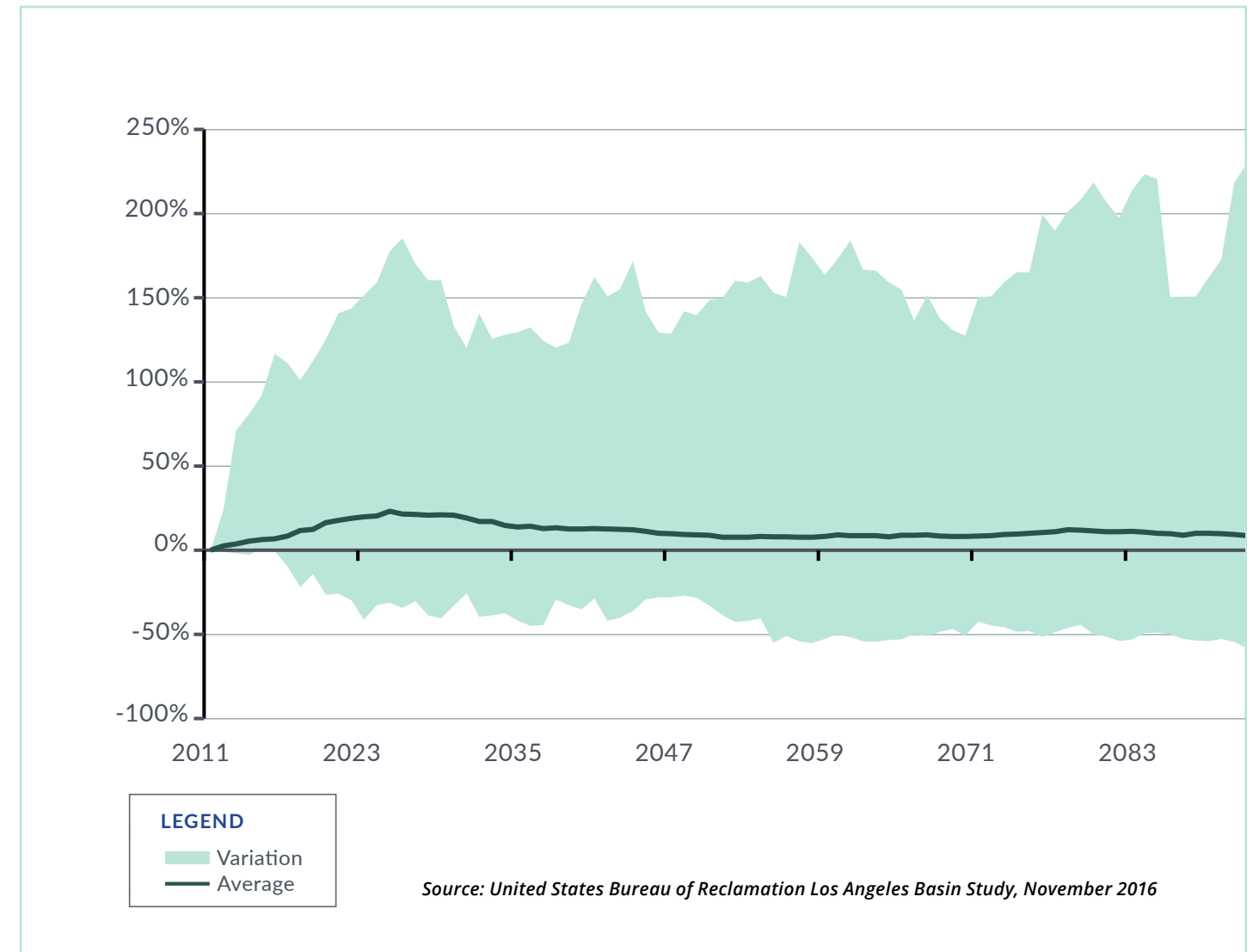


STRATEGY 5

Leveraging regional groundwater storage potential

Meeting all of Los Angeles County's water demands depends upon the use of groundwater basins that can provide water year-round, independent of the variability of precipitation events and surface flows. Since groundwater basins do not necessarily underly the communities with the greatest needs for dry year storage, identification of groundwater storage that can be accessed and delivered on a regional scale is necessary. Existing regional conveyance infrastructure (e.g., imported water) can be used as connections between groundwater basins that will allow for stored water to be conveyed across Los Angeles County.

Why this strategy is needed



Variability in Average Annual Stormwater Runoff (% change)

Groundwater basin recharge and storage potential vary from basin to basin across Los Angeles County. Most climate change models predict a decrease in the frequency of precipitation events and snowpack storage, as well as increases in the intensity of local precipitation events. These changes will necessitate enhancements in the collective ability to quickly capture and store larger volumes of water for use over extended periods of time. Additionally, planned and future regional water recycling programs are expected to produce a consistently large volume of supply that will need to be stored in groundwater basins. Coordination on timing of stormwater and recycled water recharge at centralized groundwater recharge facilities will be critical.

Actions to support this strategy

5.1 Facilitate development of regional banking agreements that promote increased groundwater replenishment and production, as well as infrastructure interconnections and enhancements to improve access to regional storage across Los Angeles County.

5.3 Engage in regional discussion of shared local water rights concerns and basin adjudication-based exporting restrictions.

5.2 Expand regional Antelope Valley groundwater banking partnerships by assessing alternatives to mitigate capacity constraints of using imported water aqueducts that connect Antelope Valley to the Los Angeles Basin.

LA COUNTY WATER PLAN Target Link

Improving use of groundwater basins for storage supports the target to **maximize ability to meet health and safety needs following an emergency by maintaining access to 6 months of emergency supply.**



STRATEGY 6

Collaborating on water quality needs and treatment technologies

Improving the efficacy and cost-effectiveness of treating impaired water is a key strategy for enhancing the reliability of regional water supplies. As legacy pollutants and new constituents of concern are regulated, and water supply sources and systems become more integrated, new challenges and innovations in water quality treatment and management processes have emerged. Economies of scale and enhanced efficiencies can be achieved through technology sharing and regional collaboration.

Why this strategy is needed

The cost of treating and testing water to meet water quality regulations for potable use is a significant portion of the overall water rate passed along to customers. In many areas within Los Angeles County, the treatment of locally generated, drought-resilient supplies, such as recycled water and groundwater, to a level of potable quality can drive the unit cost above imported water. This can create a disincentive to develop local supply when imported water is cheaper. Many new treatment technologies and projects are developed and permitted in isolation of each other, limiting the ability to leverage knowledge and resources. Information sharing will also improve local workforce knowledge.

Actions to support this strategy

6.1 Facilitate partnerships and information sharing between agencies within Los Angeles County to improve water treatment efficiency and cost through collaboration on piloting of and training for new technologies, working with drinking water regulators, sharing of information, lab sharing for emerging contaminant sample analysis (e.g., per- and polyfluoroalkyl substances (PFOS/PFOA)), public outreach, and leveraging of staff and funding resources. This action also supports Strategy 7.

6.3 Advocate for State emerging contaminants source control policy and funding.

6.2 Collaborate proactively with Regional Water Quality Control Board(s) to provide a consistent regional voice on National Pollutant Discharge Elimination System permitting and future water quality regulations.

LA COUNTY WATER PLAN Target Link

Partnering on treatment initiatives and regulatory collaboration will decrease the overall costs to individual agencies and support the target **to improve drinking water equity and affordability so that the cost for water to meet health and safety needs does not exceed 2.5% of the median household income of severely disadvantaged communities.**



Source: City of Los Angeles Bureau of Sanitation

There are many efforts to maximize water recycling throughout Los Angeles County including the City of Los Angeles' plan to maximize beneficial reuse of Hyperion Water Reclamation Plant flow.



Enhancing cost-effectiveness of pumping and treating impaired groundwater

Improving production, cost-effectiveness, and accessibility to unused impaired groundwater supplies will allow for increased groundwater production and supply reliability for many communities across Los Angeles County. Regional collaboration on designating poor quality development zones could facilitate the development of production enhancement plans as well as find partnership implementation opportunities that can increase workforce training and funding.

Why this strategy is needed



The cost to treat impaired groundwater is

200% more than imported water

**Source: Groundwater Ambient Monitoring and Assessment Program (GAMA)*

Stranded groundwater accounts for a significant amount of potential new supply throughout Los Angeles County but treatment of that groundwater can be expensive relative to importing water.

Local groundwater can be stranded (or unused) because it is often poorer quality water that requires more intensive and cost-ineffective treatment and/or conveyance to be useful as a source of supply. There are several areas in Los Angeles County where the ability to fully maximize groundwater basin potential for both supply and storage has been limited due to water quality issues from seawater intrusion, legacy contamination, increased operating costs for small systems, and impaired water plumes as well as changing water quality regulations and recharge project supplies. Additionally, greenhouse gas emissions could be reduced with future technologies that require less energy to pump or treat groundwater. Many of these groundwater basin areas underly small and at-risk systems that do not have the resources to develop and implement the necessary production enhancement plans to access that water supply.

Actions to support this strategy

7.1 Facilitate partnerships and information sharing between agencies within Los Angeles County to improve water treatment efficiency and cost through collaboration on piloting and training for new technologies, working with drinking water regulators, sharing of information, lab sharing for emerging contaminant sample analysis (e.g., PFAS/PFOA), public outreach, and leveraging of staff and funding resources. This action also supports Strategy 6.

7.3 Explore opportunities to use existing remediation operations as a potential water supply source.

7.4 Facilitate partnerships on regional treatment funding and financing opportunities, prioritizing supply diversity, water quality, and resilience of small at-risk systems.

LA COUNTY WATER PLAN Target Link

By working together with existing remediation initiatives and regulators on poor water quality development zones, we can work toward our target to **optimize production of groundwater by increasing production in areas overlying impaired groundwater by 18,000 AFY.**



STRATEGY 8

Protecting coastal groundwater basins from seawater intrusion

Groundwater basins located along Los Angeles County's coastline will need continued protection to limit the continued pressure of seawater intrusion from sea level rise that is predicted to result from climate change. Although existing barriers are solely owned and operated by the Los Angeles County Flood Control District, they benefit multiple agencies, Tribes, communities, and other stakeholders throughout Los Angeles County. As such, the ability to maintain and possibly further enhance protections and groundwater supply could benefit from regional collaboration.

Why this strategy is needed



In coastal aquifers, seawater can move into freshwater aquifers and contaminate potable groundwater supplies if groundwater levels have decreased relative to sea level. Maintaining and optimizing our seawater barriers to prevent seawater intrusion is increasingly important as the sea level rises.

Some coastal groundwater basins in Los Angeles County are protected from seawater intrusion by rows of injection wells that pump freshwater in groundwater basins near the coast to form a barrier that pushes seawater away from the groundwater basin while enhancing groundwater supplies. Without these barriers, saltwater could infiltrate coastal aquifers and contaminate groundwater supplies. In addition to more intense and less frequent storm events and more frequent and more intense droughts, climate change models are also predicting sea level rise. Seawater barrier facilities and operations will need to continue to adapt to meet the challenges of climate change and the need to fully leverage groundwater basin recharge and storage.

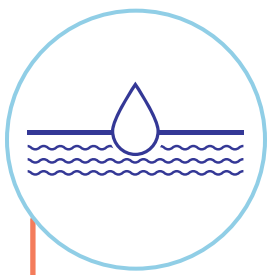
Actions to support this strategy

8.1 Determine vulnerability of barrier programs to seawater intrusion as a result of future sea level rise and evaluate opportunities to optimize barrier system operations.

LA COUNTY WATER PLAN
Target Link

Protecting our coastal groundwater basins from future sea water intrusion is critical to meeting the target to **optimize production of groundwater by maintaining at least 700,000 AFY baseline groundwater production.**

8.2 Explore partnership opportunities to create further investments and increase recharge potential at barriers to enhance protection and increase groundwater supply.



STRATEGY 9

Facilitating regional groundwater recharge understanding and initiatives

Groundwater basins in Los Angeles County are managed locally and independent of each other. Collaborating to improve understanding of inter-basin flows and manage groundwater basins from a regional perspective while addressing mutual challenges will assist in maximizing groundwater supply and storage potential.

Why this strategy is needed

Although Los Angeles County is home to numerous regional groundwater recharge facilities and programs, there is a significant amount of uncaptured stormwater, recycled water, and wet year imported water that is not yet recharged into local groundwater basins. The ability to increase centralized groundwater recharge beyond current operations can be limited due to shared concerns such as retaining recharge water within local groundwater basins, regulatory issues around potential impacts to groundwater remediation operations, and the maintenance activities at spreading ground facilities to maximize recharge potential.

Actions to support this strategy

9.1 Facilitate collaboration between groundwater basins within Los Angeles County to share information, resolve common impediments, and provide consistent guidance that will facilitate increased potential for groundwater recharge and accounting of anticipated and realized benefits provided.

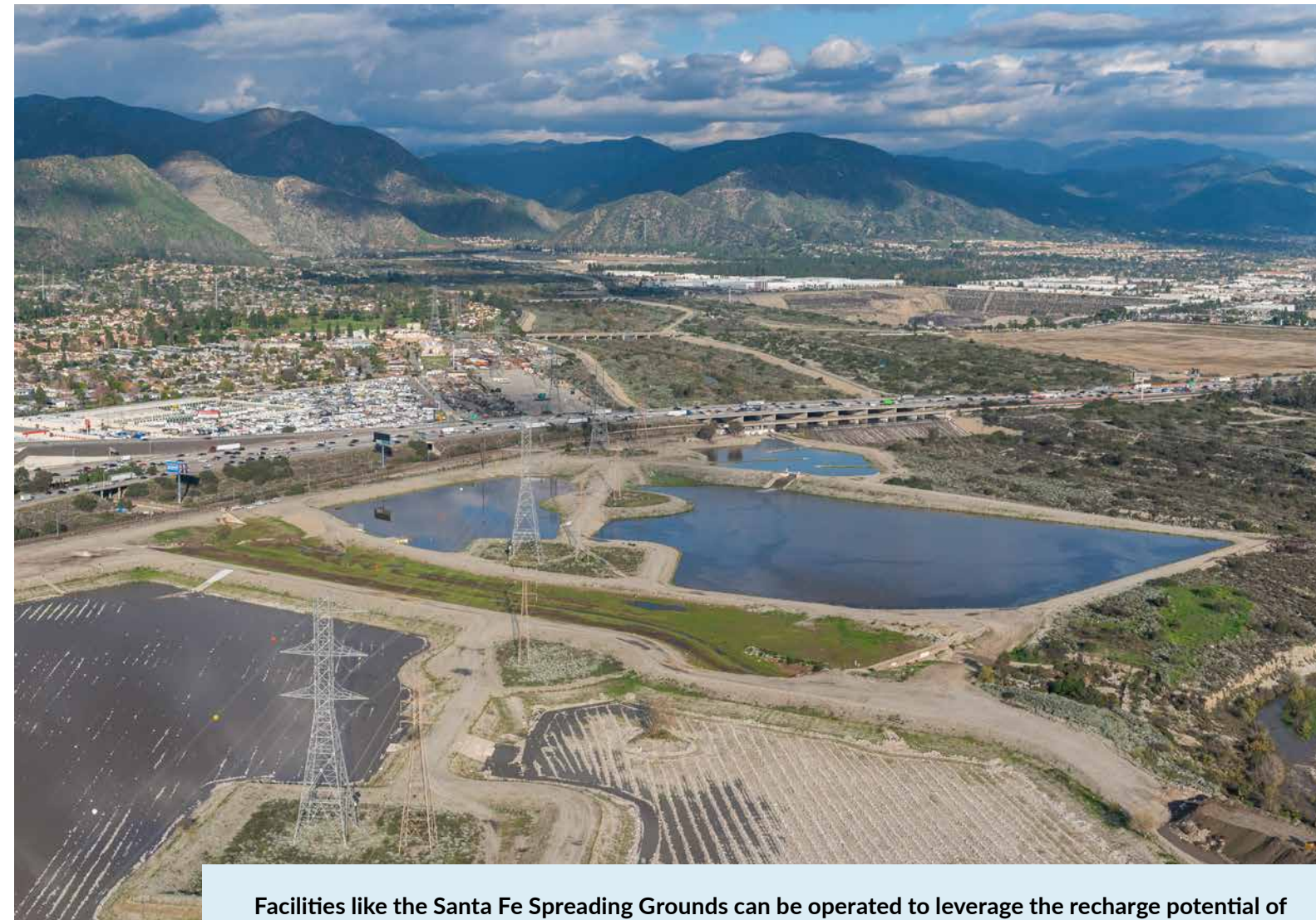
9.3 Work collaboratively with regulatory agencies to most effectively advance permitting processes and facilitate further enhancement of groundwater recharge potential.

9.2 Create a consolidated groundwater basin data platform that highlights geohydrologic interconnections and flows with an information sharing system for use to develop regional storage and groundwater management partnerships.

9.4 Acknowledge Los Angeles County Flood Control District's Sediment Management Strategic Plan to maximize recharge facility capture and infiltration rates and efforts to remove invasive species to improve groundwater recharge.

LA COUNTY WATER PLAN Target Link

Collaboration between Los Angeles County's groundwater basin managers can improve overall understanding of interconnectivity and opportunities for regional initiatives that help meet the CWP target to **increase groundwater recharge and storage by enhancing regional facility recharge by 250,000 AFY.**



Facilities like the Santa Fe Spreading Grounds can be operated to leverage the recharge potential of local surface and recycled water supplies as well as additional imported water when available.



STRATEGY 10

Facilitating natural infiltration of precipitation

Collectively, local stormwater efforts can work to increase the overall permeability of County lands, create nature-based recharge opportunities, and potentially allow for local supply development while providing multiple benefits such as improving environmental water quality, ensuring adequate water supplies to ecosystems, and providing greening and recreational opportunities. Certain programmatic initiatives to increase decentralized stormwater recharge are managed locally and through the Los Angeles County Flood Control District's Safe, Clean Water Program. Further regional collaboration between stormwater and groundwater managers will help to facilitate implementation and maximize benefits.

Why this strategy is needed

Large parts of Los Angeles County are urbanized with impermeable surfaces like buildings, roads, and parking lots. Impermeable surfaces do not allow precipitation or stormwater runoff to infiltrate naturally into groundwater basins and may reduce local stormwater capture and groundwater recharge. Implementing projects that increase stormwater recharge of groundwater basins can be challenging due to limited understanding of and/or disagreement over surface water rights as well as concerns about the infiltration of poor-quality surface water impacting groundwater basin water quality.



Although the majority of the Los Angeles River flows within engineered flood control channels, there are sections that allow for natural infiltration to occur.



Actions to support this strategy

10.1 Facilitate recharge partnerships between stormwater and groundwater managers by enhancing understanding of surface water rights and stormwater.

10.2 Conduct decentralized facility infiltration water quality impact analysis for groundwater basins to determine parameters for facility implementation and/or mitigation for changes to water quality.

LA COUNTY WATER PLAN
Target Link

Improving collaboration between stormwater and groundwater managers can improve the feasibility of implementing projects that will help meet the target to **increase groundwater recharge and storage by increasing decentralized infiltration by 80,000 AFY.**



Providing regional support for small, at-risk water systems

A regional program to identify and support small, at-risk, potentially at-risk, and failing systems within Los Angeles County, including independent systems and private wells, would provide a better understanding of each system’s unique needs, improve drinking water equity, increase workforce training, leverage funding opportunities, and tailor strategies to create longer-term resilience and higher-quality supplies.

Why this strategy is needed

	Failing	At-Risk	Potentially At-Risk
Water Systems	11	23	33
Population	11,722	249,198	512,463
Funding Since 2017	\$995,000	\$500,000	\$2,738,793

Source: State Water Resource Control Board SAFER Program as of June 2022 (data updated daily)

There are a number of smaller, at-risk systems in Los Angeles County that could benefit from a regional support program.

Actions to support this strategy

11.1 **Initiate a voluntary Small, At-Risk System Support Program or programs to promote small water system resiliency**, not just address near-term emergency needs.

11.4 **Develop program to map, monitor, address, and alert the public to drinking water quality issues** that originate from on-site plumbing issues including monitoring for color and odor issues in premise plumbing, especially in under-resourced communities.

11.2 **Identify “at-risk” systems and technical, managerial, and financial needs** by collecting existing data (such as the County Department of Public Health’s ongoing system inspection (i.e., annual sanitary surveys)) and assessment program reports, drawing upon the United States Environmental Protection Agency technical, managerial, and financial assessment guidance.

11.5 **Encourage all Los Angeles County water agencies to adopt and implement hazard mitigation plans** and to join the California Water/Wastewater Agency Response Network (CalWARN).

11.3 **Facilitate Small, At-Risk System Support Program** to provide administrative and technical advisory support to purveyors identified in Action 11.2 to take a range of resiliency actions (e.g., create Water Master Plan and asset management program, ensure workforce succession planning, establish and check interconnections, ensure emergency storage, enhance cybersecurity, acquire emergency generators, provide resources for grant applications, regulatory compliance, and existing operations and maintenance, etc.).

11.6 **Expand local agency participation in Water Information Sharing and Analysis Center** to access the latest cybersecurity strategies.

Many small, at-risk systems serve under-resourced communities within Los Angeles County. As a result, these communities are at a higher risk of not receiving the same level of drinking water quality and reliability as other communities within Los Angeles County. Compliance with regulated drinking water standards can still result in inequities in the taste, color and odor of water served. Although small, at-risk systems in Los Angeles County can be regulated by multiple entities, the SWRCB Division of Drinking Water is the only entity currently documenting underperforming systems through reporting of maximum contaminant level exceedances (e.g., Safe and Affordable Funding for Equity and Resilience program). Identifying systems that are at risk of providing poor water quality, unreliable supply, cybersecurity threats, and excessive cost to ratepayers can be more challenging at the state level. Additionally, there is limited regulatory oversight to ensure that these water systems are receiving enough revenue to adequately maintain their infrastructure. Currently, the primary strategy fostered by the SWRCB to mitigate underperforming water systems is consolidation

into larger, adjacent systems. This strategy is not always applicable in more rural areas of Los Angeles County given the isolated locations of some small water systems (e.g., those in the Antelope and Santa Clarita Valleys), nor necessary if adequate supportive strategies are in place.

LA COUNTY WATER PLAN
Target Link

Providing direct support to smaller at-risk water systems through a focused, voluntary regional program will greatly increase the ability to meet the CWP target that seeks to **reduce at-risk systems by 100%**.

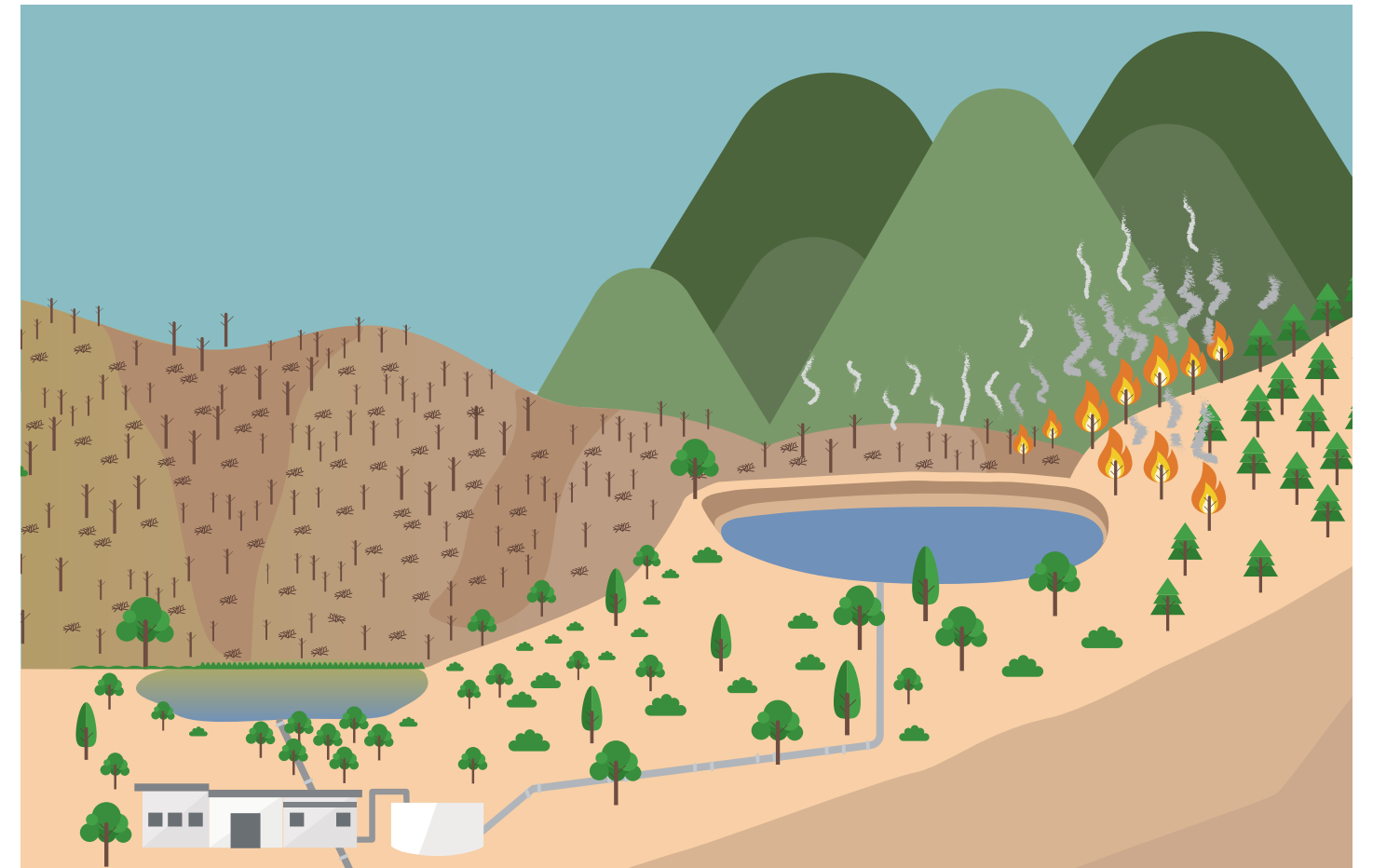


STRATEGY 12

Mitigating wildfire effects on water supply and quality

Collaboration between water and land management entities on sharing information, planning ahead, supporting existing efforts, and implementing measures can leverage regional resources to help mitigate the impacts of wildfire on both drinking water supply and environmental water quality. Land management entities and fire management groups have the primary responsibility for wildfire prevention, however there are ways that the water management community can support and enhance those efforts.

Why this strategy is needed



Ash, debris, fire retardant, and other contaminants can impair surface water supplies during and after wildfire events through erosion and sediment transport.

Wildfire frequency and intensity has been increasing across Los Angeles County and is a cause of great concern for water supplies and environmental water quality. Wildfires can interrupt power supply and damage infrastructure, directly impacting the ability to maintain water and wastewater systems during and after events. Wildfires increase pollutant loads and decrease watershed infiltration that can lead to flooding, erosion, and mass wasting of watershed lands – impacting communities as well as the quantity and quality of water resources.

LA COUNTY WATER PLAN Target Link

Working with land and fire managers on reducing the potential for and the water resource impacts from wildfires starts with the CWP target to **confirm 100% of water management agencies within the wildland-urban interface are implementing a wildfire resilience or mitigation plan.**

Actions to support this strategy

- 12.1 Organize a regional wildfire prevention collective** that brings together water, land, and fire managers and Tribes to collaborate, share information, and explore opportunities for mutually beneficial watershed management programs and projects (e.g., fuel reduction, invasive species removal, healthy headwaters, post-fire monitoring) for both riparian and upper watershed areas.
- 12.2 Create a programmatic permitting tool/process with the United States Army Corps of Engineers for the 404 permit** for fuel reduction measures that applies to the entire County, with the Regional Water Quality Control Boards for the 401 Water Quality Certification, and with the Coastal Commission for the Coastal Development Permit.
- 12.3 Enhance existing low water use landscaping education programs** to include fire-scaping with information on species that contribute to wildfire spread (e.g., eucalyptus, palms, rosemary), fire starts, firesafe planting standards, landscaping choices, and water collection systems for use during fires.
- 12.4 Collaborate on identifying and pursuing funding opportunities** to support regional wildfire prevention programs.
- 12.5 Enhance existing hazard mitigation plans to include regional fire management strategies** for agencies located within wildland-urban interfaces.
- 12.6 Advocate for modifications to existing air quality regulations** that allow water agencies to run emergency generators longer during fire events to maintain water supply.
- 12.7 Explore potential land, trail, and forestry management efforts** on wildfire prevention in upper watershed areas as well as along transportation and utility corridors to remove ignition sources as well as existing firefighting efforts to minimize dispersal in riparian areas.
- 12.8 Support efforts exploring alternatives to fire retardants containing PFAS/PFOA** that may run off into streams and spreading grounds.



STRATEGY 13

Managing invasive species in riparian areas

As many water resources related agencies also manage some watershed riparian areas, there is an opportunity for regional collaboration between watershed land and water management entities on invasive species removal done in an ecologically sensitive manner that restores native habitat. Removal of invasive species can be facilitated by wildfires and flooding if additional measures are taken following these events to fully remove and replant native species within damaged areas.

Why this strategy is needed

While any type of invasive species can create watershed issues, those that infiltrate riparian corridors are of particular concern to Los Angeles County's water resources. Riparian invasives (e.g., *Arundo donax*, tamarisk, black mustard, etc.) can dramatically deplete surface water supplies relative to native species and are also known contributors to wildfire ignition and spreading potential. Removal of invasives and replanting with native species in riparian areas is a time-sensitive and cost-intensive process that needs to be maintained over time to remain effective.

Actions to support this strategy

13.1 Enhance existing Weed Management Area for Greater Los Angeles to serve as an overall invasive management decision team with tiers of information sharing to support coordination among agencies (permitting, resource sharing, defensible space guidelines, etc.) with state and federal involvement and an invasive land coordinator.

13.4 Explore collaboration with United States Army Corps of Engineers, United States Forest Service, state and national parks, individual cities, nonprofits, Tribes, and private landowners in invasive species removal and native planting in watershed areas managed by water and flood control agencies.

13.2 Share information on areas with invasive species of mutual concern across Los Angeles County as well as planning initiatives, programs, and measures being taken to reduce invasives in riparian areas.

13.3 Consider initiating an annual regional invasive species removal program and post-fire program to improve soil quality and reduce repropagation, further spreading, and biomass fuels.

LA COUNTY WATER PLAN
Target Link
 Enhancing and growing existing efforts to reduce invasive species as well as taking advantage of post-fire conditions will help to meet our targets to **reduce fire-contributing species in riparian areas by 2,900 acres.**



Invasive plant species, such as *Arundo donax*, can increase the potential for wildfire ignitions as well as contribute to increased rates of wildfire spread and intensity.

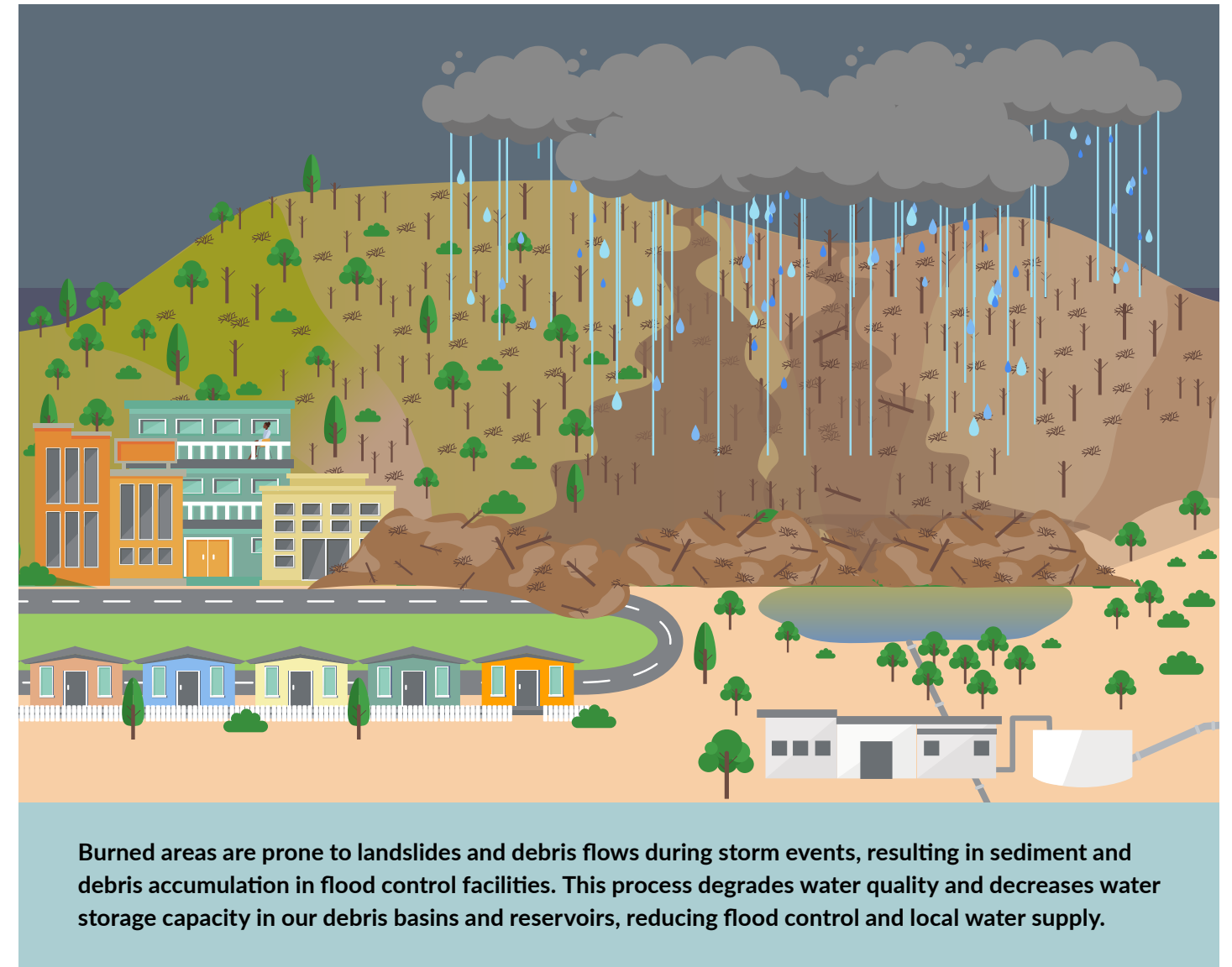


STRATEGY 14

Facilitating sediment management and debris removal from flood control facilities

Regular and enhanced post-wildfire maintenance (e.g., removal of debris and management of sediment) of debris basins and reservoir facilities is critical to maximizing post-wildfire protection and enhancing regional water supplies. Improving prediction of wildfire-related sediment and debris loading impacts, as well as fostering regional support of the actions necessary to mitigate those impacts, will allow for enhanced flood risk mitigation and water supply benefits for the entire region.

Why this strategy is needed



Burned areas are prone to landslides and debris flows during storm events, resulting in sediment and debris accumulation in flood control facilities. This process degrades water quality and decreases water storage capacity in our debris basins and reservoirs, reducing flood control and local water supply.

Burned areas are vulnerable to flash flooding and debris flows. Following large storm events, sediment and debris can accumulate in flood control facilities, resulting in reduced water storage capacity. The Los Angeles County Flood Control District captures and manages the majority of stormwater flows across Los Angeles County to protect communities from flood damage and increase capture of local water supplies. Eroded sediment and debris are collected and retained by a network of debris basins, reservoirs, and flood control channels, which support recharge of stormwater, recycled and imported water. The ability for the facilities to retain post-wildfire flows as well as facilitate recharge requires consistent removal of accumulated debris and vegetation growth which is often challenging given regulatory constraints and community concerns.

Actions to support this strategy

14.1 **Improve modeling and weather forecasting** to predict the risk of sediment-laden flows after wildfires.

14.2 **Increase understanding of how debris flows and fires** impact percolation rates.

14.3 **Work collaboratively with regulatory agencies** to develop flexible approaches that recognize and allow for the removal of vegetation necessary for maintaining effective water supply and flood management infrastructure.

14.4 **Promote continuous dialogue and engagement with Tribes, communities, and other stakeholders to learn about community needs and exchange ideas** on the importance of sediment management to maintain flood protection.

LA COUNTY WATER PLAN
Target Link
 Improving the understanding of post-fire impacts as well as facilitating effective debris basin management will help to achieve our target to **maintain a minimum of 75% of available capacity in all debris basins and 80% of average available capacity in reservoirs.**

ALIGNING TARGETS AND STRATEGIES

Strategies	Targets															
	A. Achieve 100% compliance with State Urban Water Use Objectives	B. Increase local supply sources by 580,000 AFY	C. Meet 100% of water demands even in times of drought	D. Maintain access to 6 months of emergency supply	E. Maintain at least 700,000 AFY baseline groundwater production	F. Increase production in areas overlying impaired groundwater by 18,000 AFY	G. Enhance regional facility recharge by 250,000 AFY	H. Increase decentralized infiltration by 80,000 AFY	I. Reduce at-risk systems by 100%	J. Improve drinking water equity and affordability	K. Reduce color, taste, and quality issues by 50%	L. Confirm 100% of small water systems have access to alternative sources of supply	M. Reduce fire-contributing species in riparian areas by 2,900 acres	N. Reduce human-caused ignitions by 50%	O. Maintain 75% capacity in all debris basins and 80% capacity in reservoirs	P. Implement a wildfire resilience or mitigation plan
1: Achieving the most efficient water use possible countywide	✓		✓						✓							
2: Collaborating on consistent drought preparedness and response messaging	✓		✓						✓							
3: Coupling local supply development with regional conveyance		✓	✓	✓	✓		✓		✓	✓		✓		✓		
4: Managing salt and concentrate regionally		✓	✓		✓	✓	✓			✓		✓				
5: Leveraging regional groundwater storage potential		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	
6: Collaborating on water quality needs and treatment technologies		✓	✓		✓	✓	✓	✓	✓	✓	✓				✓	
7: Enhancing cost-effectiveness of pumping and treating impaired groundwater		✓	✓		✓	✓	✓		✓	✓	✓	✓			✓	
8: Protecting coastal groundwater basins from seawater intrusion		✓	✓	✓	✓	✓	✓		✓							
9: Facilitating regional groundwater recharge understanding and initiatives		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	
10: Facilitating natural infiltration of precipitation		✓	✓	✓	✓			✓	✓				✓		✓	
11: Providing regional support for small, at-risk water systems	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12: Mitigating wildfire effects on water supply and quality		✓			✓	✓	✓	✓	✓				✓	✓	✓	✓
13: Managing invasive species in riparian areas		✓	✓				✓	✓	✓				✓	✓	✓	✓
14: Facilitating sediment management and debris removal from flood control facilities		✓	✓	✓	✓		✓			✓			✓	✓	✓	

Additional information about Targets is available in Appendix B.



CHAPTER 4 WORKING TOGETHER FOR A RESILIENT WATER FUTURE

The CWP is more than this initial document – it is a dynamic planning and policy platform rooted in the spirit of fostering ongoing regional collaboration.

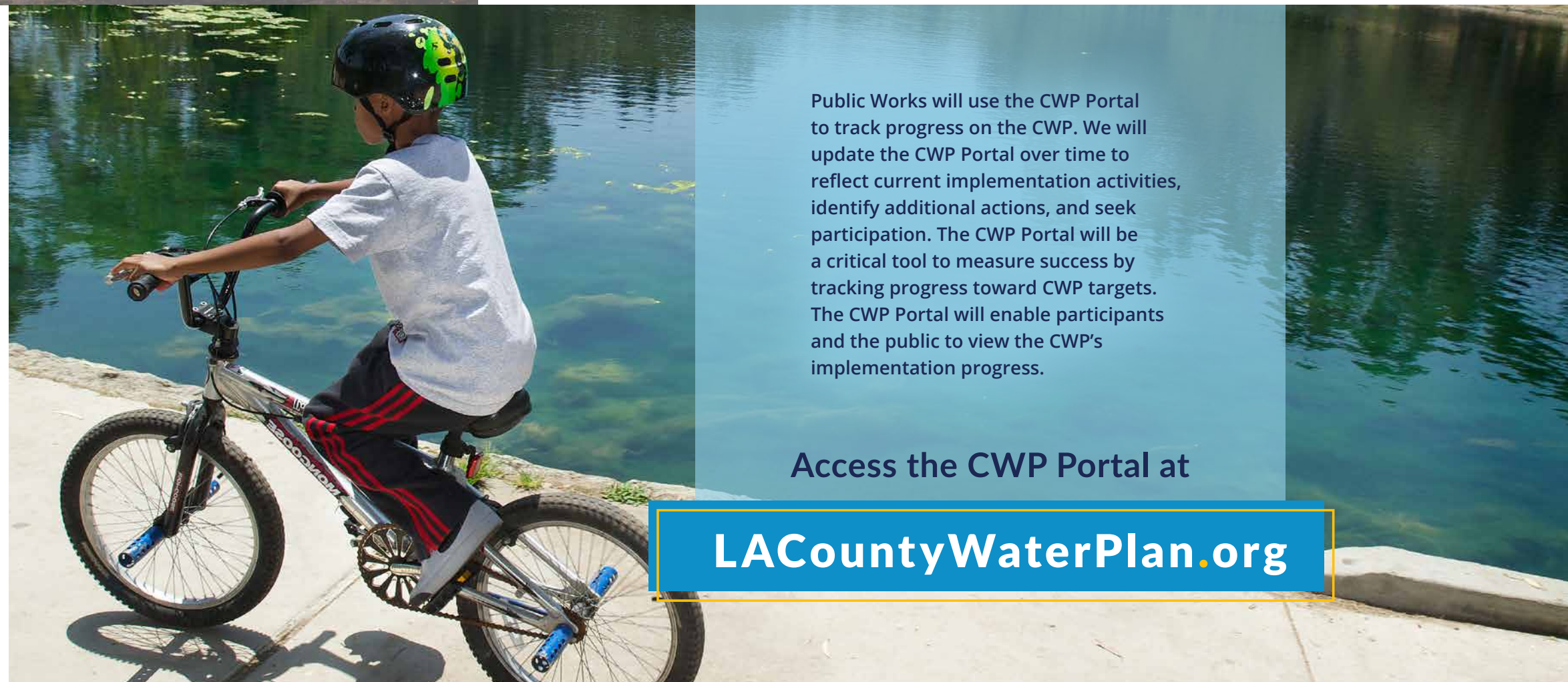
Our values, including considering equitable benefits and comprehensive impacts of water resource management decisions, will continue to drive our progress. The success of this planning effort will continue to involve water management entities and stakeholders working together with facilitation by Public Works, to realize our shared vision for future water resilience.

Facilitating CWP Implementation

Public Works is committed to facilitating continued collaboration and success toward CWP targets, strategies, and actions, and tracking and reporting progress. Following CWP adoption, Public Works will initiate implementation of the CWP. Our overall focus will be on bringing together participants and resources to fulfill the vision of the CWP. Our role is to lead and facilitate the CWP implementation, which will consist of three primary tasks: (1) develop and implement two-year Action Plans, (2) continue collaboration with stakeholders, and other planning efforts, and (3) track and share progress.

Public Works will actively solicit participation in the CWP implementation from stakeholders, leveraging the IRWM programs as well as other forums. The CWP Portal will be used to seek and facilitate participation, highlighting opportunities for interested parties to get involved. Plan implementation will be adaptively managed and informed by engagement with stakeholders.

As water resource needs and opportunities in Los Angeles County continue to evolve, so will the CWP. Based on valuable input from stakeholders, other topics are expected to be explored in future iterations.



Public Works will use the CWP Portal to track progress on the CWP. We will update the CWP Portal over time to reflect current implementation activities, identify additional actions, and seek participation. The CWP Portal will be a critical tool to measure success by tracking progress toward CWP targets. The CWP Portal will enable participants and the public to view the CWP's implementation progress.

Access the CWP Portal at

LACountyWaterPlan.org

IMPLEMENTING TWO-YEAR ACTION PLAN

Additional resources will be required to implement the Plan. Public Works' first implementation step will therefore be to pursue resources to establish and facilitate task forces that could advance specific actions. As part of CWP implementation, Public Works will maintain an Action Plan, which identifies the specific steps to advance progress on CWP actions within a two-year period. Where appropriate, Public Works may directly lead an action. More often, Public Works will primarily serve to encourage the collaboration among the Task Force, including engagement with other water management entities and stakeholders to support each action, as applicable. Public Works, in collaboration with partners and stakeholders, will aim to update the Action Plan every two years, building on prior accomplishments and considering the evolving water management needs, interests,

other long-term stable funding sources. The CWP is intended to provide general direction, including collaborative targets, strategies, and actions. Nothing in the CWP should be construed as a commitment by any participating entity to fund the implementation of any specific actions identified herein. Adoption of the CWP is not intended to serve as approval or authorization for any specific activity that would be considered a project under the California Environmental Quality Act (CEQA).

CONTINUING COLLABORATION

Public Works will continue to work in concert with IRWM regions to implement the CWP, in particular to engage stakeholders and enhance the dialogue on additional opportunities to build resilience through regional collaboration. To support progress on the Los Angeles County targets established in the OurCounty Sustainability Plan, we will coordinate with the County Chief Sustainability Office on implementing strategies and actions to advance our mutual goals. We will also coordinate with and leverage Infrastructure LA, an existing countywide initiative leading regional collaboration to bring resources, including funding, to Los Angeles County. As a sister program to other Public Works-led programs like the Safe, Clean Water Program, the CWP implementation will also seek opportunities to work collaboratively with those efforts.

SHARED PROGRESS

Public Works will track continued progress toward the CWP targets and share this progress on the CWP Portal. To track long-term progress towards meeting the CWP targets, Public Works will lead a collaborative process to collect data and information from entities throughout the County and State, leveraging the CWP Portal as well as outside data management platforms.

To encourage continued participation and highlight CWP successes, CWP annual implementation updates will be provided on the CWP portal. The updates will highlight specific programmatic or project accomplishments throughout Los Angeles County that support CWP regional targets and strategies, including both those undertaken through the CWP and through other local and regional efforts.



and opportunities of Los Angeles County. The current Action Plan is included as Appendix A. The two-year Action Plan provides specifics to support the pursuit of the necessary resources to advance each action. The CWP is intended as a planning tool, or guide, for the development of a shared, inclusive, regional path forward to sustainably and equitably achieve safe, clean, and reliable water resources for Los Angeles County. The CWP is a living document which contains concepts that will only become a reality if agencies, Tribes, and stakeholders continue to collaborate effectively and secure corresponding resources. The CWP is subject to change based on the changing needs of the region, new technologies, future legislation and regulations, the continued cooperation of participating entities, and the availability of state, federal, and

Engaging in CWP Implementation

All stakeholders with an interest in water resources management in Los Angeles County have a role to play in realizing the vision of the CWP. There are opportunities to participate and engage in all three tasks of CWP implementation.

CWP IMPLEMENTATION TASK	HOW TO GET INVOLVED
Implement Two-Year Action Plan	<ul style="list-style-type: none"> Leading or participating in an action or Task Force Sharing information and resources
Continue Partnership	<ul style="list-style-type: none"> Leveraging local and regional efforts to support the CWP vision Participating in opportunities for collaboration
Share Progress	<ul style="list-style-type: none"> Reporting successes that align with CWP strategies and actions Providing data to support tracking progress on targets

Our Road to Water Resilience Together

This edition of the CWP is the work of a dedicated group of agencies, organizations, and individuals who truly care about the best interests of Los Angeles County's residents and are working to bring the CWP's vision to fruition. These contributors are acknowledged in Appendix F. As entities came together to produce this plan, they understood that Los Angeles County water managers, Tribes, other stakeholders, and the public are all in this together and have the opportunity to make things better for generations to come.

To achieve our collective vision of equitable, sustainable, resilient, safe, clean, and reliable water resources for Los Angeles County, it will be critical that we continue to work together. Public Works is committed to fostering continued collaboration on regional opportunities to generate innovative solutions to complex problems as water management in Los Angeles County evolves. **It will take all of us to achieve water resilience.**





equity

sustainability
opportunity

LA COUNTY
WATER PLAN

LACountyWaterPlan.org

local

water
resources
collaboration
relationships

regional

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resilience

