

## EXECUTIVE SUMMARY

This One Water One Watershed (OWOW) Plan Update 2018 is the Integrated Regional Water Management (IRWM) Plan for the Santa Ana River Watershed (watershed). The OWOW Plan Update 2018 was written by and for stakeholders throughout the watershed. This plan considers the challenges and opportunities facing the entire watershed area of the Santa Ana Funding Region within the California IRWM Program. By inviting together stakeholders from all subregions, political jurisdictions, water agencies, non-governmental organizations, businesses, and the public, this OWOW Plan Update 2018 addresses all types of water as a single resource, inextricably linked to people, the land, and nature.

The One Water One Watershed Plan Update 2018 describes how collaborative watershed planning, water and land management, and project implementation supports improved sustainability, resilience, and quality of life throughout the Santa Ana River Watershed through 2040.

This plan is built on the strong foundations laid by the OWOW Plan, adopted in 2010, and the OWOW 2.0 Plan, adopted in 2014. These two earlier efforts were lauded within the watershed, across California, and the country. The OWOW 2.0 Plan received awards from planners, engineers, and business leaders for its good governance and stakeholder-led process.

The OWOW Plan Update 2018 was begun in July 2016 with a meeting of the OWOW Steering Committee. At that meeting, the Committee approved efforts to secure a planning grant from the state in support of the update process and adopted a policy document that described how projects can be included in the OWOW Program and made eligible for the expected implementation grants.

In the 28 months that followed, the OWOW 2.0 Plan was reconsidered in light of the significant changes impacting the watershed since early 2014. In those years the fiscal recovery began to be felt in portions of the watershed, and the State of California went through one of its most severe droughts on record. The communities of the watershed made strides to support conservation as a way of life in California, implementing widespread landscape retrofits and other conservation programs. Other significant investments were made throughout the watershed by agencies, cities, counties, and community members alike to make the watershed more resilient in response to uncertainty and more sustainable over the long term.

The OWOW Plan Update 2018 is subtitled “Moving Forward Together” to mirror the earlier plans, which focused on movement toward goals. Working together has been fundamental to the OWOW Program (and SAWPA) since the program’s inception, and the OWOW Plan Update 2018 is built by the stakeholders for the stakeholders. “Moving Forward Together” also reflects the OWOW Program’s commitment to ensuring that no one is left behind as progress is made, and that progress somewhere in the watershed does not cause any undue burden elsewhere in the watershed.

The Santa Ana Watershed Project Authority (SAWPA) is once again proud to facilitate the OWOW Program on behalf of all communities, waters, and lands across the watershed, and to present this OWOW Plan Update 2018.

## OVERVIEW

The Santa Ana River Watershed faces enormous challenges adapting to changing conditions, many of which are at an unprecedented scale in its modern history. The watershed's population, already one of the most densely populated in the State, continues to grow and urbanize, increasing demands on water supply, water quality, and flood management. Climate change, population growth, the aging of infrastructure, and new awareness of environmental degradation affect how we manage water for the future.

Most agree that the water management approaches of the past fifty years are no longer sustainable in today's environment and economic climate. And most also agree that a more integrated and collaborative approach to water resource management shows tremendous promise for achieving sustainable water management everywhere. In the Santa Ana River Watershed, this approach is not new; it has been our practice and legacy since the first integrated plan was approved by the SAWPA Commission in 1998.

The goal of yesteryear was affordable water for a growing economy. Over time, the goal has changed to the complicated balancing act of environmental sustainability, quality of life and, economic growth in a changing environment dominated by water and financial scarcity. The strategy to achieve this goal is integrated water management. This means the various silos of water supply, flood management, water quality, ecosystem restoration, and recreation are brought together as one.

This approach ensures better coordination across functions that are often managed separately and across a broader geographic scale larger than the boundaries of individual agencies. Through integration at the watershed scale, economic and environmental performance is more effectively balanced. This water resource planning approach based on a watershed scale has even been recognized by independent review by objective and nonpartisan research organizations such as the Public Policy Institute of California, which cited SAWPA as an excellent example of integrated water management in the state.

*SAWPA's approach—coordination, cooperation, and integration of water agencies to pool resources and manage water at the basin scale—is one of California's best models for integrated water management.*

—Public Policy Institute of California  
2011, "[Managing California's Water – From Conflict to Reconciliation](#)"

## VISION

To guide the development of the initial OWOW Plan, stakeholders in 2007 established a vision, goals, and objectives for the watershed. In those first planning sessions, a shared purpose was formed that underlies the rest of the plan and the projects and programs that are prioritized for implementation. This initial vision has been adjusted over time with each successive OWOW Plan.

Today, the vision of the OWOW Program is a watershed that:

- Is sustainable, droughtproof, and salt balanced by 2040
- Avoids and removes interruptions to natural hydrology, protecting water resources for all
- Uses water efficiently, supporting economic and environmental vitality
- Is adapted to acute and chronic climate risk and reduces carbon emissions
- Works to diminish environmental injustices
- Encourages a watershed ethic at the institutional and personal level

The OWOW Program, and the OWOW Plan Update 2018, serve all people and communities in the watershed. The plan itself is developed by stakeholders drawn from across the diversity of communities and interests in the watershed. Gathered in workgroups called “Pillars,” these stakeholders lead development of the goals and objectives of the plan, and then the recommended strategies for how to achieve those goals. The Pillars are the most important innovation of the OWOW Program and are the source of the OWOW Program’s strength.

The OWOW Steering Committee, formed with the development of the original OWOW Plan, are the representative decision makers for the OWOW Program. Working under a delegated authority of the SAWPA Commission, the OWOW Steering Committee listens and reviews the various stakeholder interests, driving consensus where possible, seeking compromise when needed, allocating resources, and prioritizing strategies and projects for implementation.

The SAWPA Commission, constituted of one elected director from the five member agencies of SAWPA, is the approved Regional Water Management Group (RWMG) for the Santa Ana Funding Area, and therefore is ultimately responsible for the OWOW Plan Update 2018.

## OWOW Guiding Principles



### Create Anew

A shared vision of a healthy productive watershed



### Collaboration Across Boundaries

Citizens of the watershed, finding multi-jurisdictional solutions



### Adopt Systems Approach

Problems are interrelated, seek synergies, create catalysts

Source: One Water One Watershed & Santa Ana Watershed Project Authority

## PRINCIPLES FOR WATERSHED PLANNING

Watershed planning is well established in the United States and around the world. The watershed has benefitted from watershed planning since SAWPA was formed in the early 1970s. The OWOW Program follows these watershed planning principles:

- Planning must be watershed-wide and bottom-up in order to allow for a holistic and systematic approach to watershed management.
- Involving stakeholders is fundamental, and must include those representing counties, cities, and water districts, as well as the private sector and the regulatory, environmental, and environmental justice communities. The active participation of a diversity of voices and interests ensures the integration of different interests in the watershed beyond political boundaries.
- Developing the plan must not be linked directly to any particular source of implementation funding. All opportunities, challenges, goals, and strategies must be considered in an integrated way to provide the most effective plan, and the most effective change in the watershed.
- Developing and implementing the plan must result in new agreements and partnerships, and no effort at improvement somewhere in the watershed can be at the unreasonable expense of another.
- Achieving sustainable water management that equitably balances competing interests to ensure long-term health and prosperity for society and nature is at the core of watershed planning.

## OWOW PROGRAM GOVERNANCE

For the OWOW Program, the term “governance” describes the formal and informal collaborative decision-making that sits at the core of the bottom-up approach. Goals are set, strategies considered and recommended, and partnerships are built by those who step forward to participate in the program. In addition, explicit efforts which were initiated in the OWOW 2.0 Plan are continued in OWOW Plan Update 2018 to ensure that community expertise is sought from members of communities who have historically been underrepresented in integrated water management planning. Leadership and coordination of the OWOW Program occurs at several levels:

- The watershed community at large is involved through the 10 Pillar workgroups (called Pillars because together they carry the load of decision-making), representing different watershed issues. The Pillars identify issues, recommend solutions, and write the OWOW Plans.
- The OWOW Steering Committee is a representative decision-making body composed of elected officials and representatives from the Counties of Orange, Riverside, and San Bernardino; municipalities; water districts; the private sector; and the environmental and regulatory communities. The OWOW Steering Committee develops the goals and objectives of the OWOW Plans, makes strategic decisions, prioritizes project tasks, and issues recommendations.
- The SAWPA Commission has five members, each an elected leader from one of the member agencies of SAWPA. The SAWPA Commission provides final direction, review, and approval.

- SAWPA administration and staff facilitate the OWOW Program on behalf of all watershed stakeholders under the standards and authority of the California IRWM Program.



## GOALS

The OWOW Plan Update 2018 has six goals, shown below. The goals are evolved from the earlier OWOW Plans. This evolution can be attributed to the changing understanding about the opportunities and challenges facing the watershed, as well as the lessons learned, and accomplishments achieved during implementation of the earlier plans.

The six goals of the OWOW Plan Update 2018 are to:

- Achieve resilient water resources through innovation and optimization.
- Ensure high-quality water for all people and the environment.
- Preserve and enhance recreational areas, open space, habitat, and natural hydrologic function.
- Engage with members of disadvantaged communities and associated supporting organizations to diminish environmental injustices and their impacts on the watershed.
- Educate and build trust between people and organizations.
- Improve data integration, tracking, and reporting to strengthen decision making.

## PLANNING TARGETS

The OWOW Plan Update 2018 holds the vision as the target—that is, a sustainable watershed. Planning to achieve that vision comes from this entire document, focused on the six goals. By striving toward those goals, the watershed will move toward achievement of the vision. The vision is an “infinite game,” in that the effort necessary to achieve and then remain within the vision can never end. Sustainability, as it is used in the OWOW Program, is not a destination, it is a process.

These goals will not be achieved by just building projects using general-obligation bond money. These goals reflect the broad view that the OWOW Program holds, and the systems thinking that

comes from the stakeholders and Steering Committee, all of which bring deep wells of individual expertise to the collaboration. Pooling these resources ensures that the planning targets and indicators of progress toward goals are equally broad, selected for their ease of measurement and clear meaning that can be understood by all participants.

For the OWOW Plan Update 2018, planning targets are drawn from an assessment tool developed in partnership with California Department of Water Resources. The tool uses two measurable indicators for each of the six goals. When completed annually, the tool will reflect progress towards the goals, helping all stakeholders and decision makers to revise management strategies when needed. In this way, the target is progress, which will be assessed annually.

## RECOMMENDATIONS

Ten Pillar workgroups submitted Recommended Management Strategies and Policy Strategies, which are key to developing the correct suite of implementation efforts. There is only a fuzzy distinction between the two types of recommendations, and the workgroups were encouraged to consider first what strategies can be implemented by people, organizations, or agencies given current rules, technology, budgets, and authorities. These are the management strategies. Policy strategies, on the other hand, are those things that require the action of elected members of government, the development of new funding sources, or implementation of new technology. Again, the distinction between the two strategy types is loose, and often progress will require approaches that integrate both.

Below is a selection of recommendations from the Pillar chapters, selected to display the diversity of ideas and breadth of innovative thinking contributed by these workgroups:

### WATER RESOURCE OPTIMIZATION PILLAR

#### *Purchase MS4 credits.*

The Municipal Separate Storm Sewer System (MS4) permit process is intended, among other things, to increase the amount of stormwater captured and recharged in the watershed. These permits require the owner to construct their project in such a way as to recharge stormwater on their site. However, in some cases it may be more ideal from a water management perspective to recharge the stormwater somewhere upstream. One way to introduce flexibility into this process would be to allow owners to purchase MS4 credits, which could be applied to recharge projects in other locations. There may also be an opportunity to allow these credits to be used throughout the watershed. For example, a project in Orange County could purchase credits that could be used for a project in the upper watershed.

### RECYCLED WATER PILLAR

#### *Facilitate recycled water exchange.*

Nearly all wastewater treated above Prado Dam is currently discharged into the Santa Ana River. The lower watershed uses the effluent to recharge its groundwater basin and reduce the need for

imported water. In the proposed exchange, the upper watershed would continue to deliver treated wastewater to the lower watershed via the Santa Ana River instead of developing recycled water programs. The lower watershed would change the place of delivery for some of the water they plan to import to the upper watershed, which would replace the treated wastewater. Because recycled water is 100% reliable and imported water is about 60% reliable, storing imported water in the upper watershed (or other water bank) during wet years for use in dry years would mitigate the lower reliability of imported water.

## DISADVANTAGED COMMUNITIES AND TRIBAL COMMUNITIES PILLAR

### *Manage plant palettes.*

Long-term management plans should be developed, with input from California Native Americans, to increase the success of native plants and minimize health risks in the landscape. Incorporating traditional gathering and tending practices into management plans is becoming more common on both private and public lands. It is also important to recognize that native plants are very dependent on the correct water structure (amount, flow rate, and mineral content) being available at a specific location to help these plants and the communities that rely on them survive climate changes and different weather patterns.

### *Focus on critical infrastructure.*

It is recommended that critical infrastructure, which supports a resilient water supply, effective sanitation, and sufficient flood protection, be prioritized in communities where it is deficient or threatened. Projects that achieve this recommendation should be prioritized for implementation and funding requests. In particular, the transition from insufficient septic to sanitary sewer is a high priority, as is the need to overcome localized flooding that impacts pedestrians. Small agencies require technical assistance and outside funding to support these transformations.

## CLIMATE RISK AND RESILIENCE PILLAR

### *Address and mitigate public health risks.*

Climate change will result in increased health risks through more extreme and persistent weather events, increased temperatures, and decreased water supply reliability. Members of disadvantaged communities, particularly individuals experiencing homelessness, are disproportionately at risk. Consideration and mitigation of public health risks, particularly for members of the most vulnerable communities, will be an important component of climate adaptation. It is recommended that efforts protect public health in the context of climate change by providing targeted education, developing programs that ensure the human right to water, and working with public health agencies to align programming and communication.

## **INTEGRATED STORMWATER MANAGEMENT PILLAR**

*Identify floodplains for habitat and infiltration.*

Well-functioning floodplains provide habitat for a significant variety of plant and wildlife species and provides for natural reduction of flood flows. Flooding can recharge groundwater basins, improve water quality, and control erosion. Development in floodplains can permanently alter natural floodplain functions, destroy habitat of sensitive species, and reduce the beneficial connections between different types of habitat and adjacent floodway corridors. Identification of floodplains that are still in their natural state could directly preserve areas for open space, habitat, and natural hydraulic function.

## **LAND USE AND WATER PLANNING**

*Work with planning organizations and councils of government.*

Collaborative effort should be undertaken to develop a checklist of land use planning tools that will increase groundwater recharge and that can be incorporated into local ordinances, an incentives-based program to encourage private property stormwater capture or hydrologic connectivity, and private property invasive weed management. Model ordinances and policies must be collaboratively developed related to complete streets, connectivity of trail systems and parks, tree planting and care, and early interaction with water agencies when making land-use decisions.

## **NATURAL RESOURCES STEWARDSHIP PILLAR**

*Provide sustainable funding for ongoing maintenance.*

Over the past few decades, development interests, regulators, and environmental groups have worked together to encourage habitat conservation and enhancement while allowing for reasonable land development. Such efforts include natural community conservation plans and habitat conservation plans. These programs have provided large conservation areas to accommodate large developments but have taken years and large financial commitments to develop and implement. Sustainable funding sources for the maintenance of conservation areas can come from cooperative agreements between public landowners and organizations that conduct long-term stewardship of habitat and conservation areas.

## **WATER QUALITY PILLAR**

*Protect ocean water quality.*

The primary emphasis with ocean water is maintaining water quality in order to protect marine resources and public health. Ocean water quality is evaluated using a number of different parameters and constituents related to beneficial uses. In the Regional Board's water quality control plan (Basin Plan), one of the key beneficial uses is REC-1 (full body contact recreation). In addition to recreation, the ocean waters also support important habitat areas, including two Areas of Special Biological Significance and their related onshore Critical Coastal Areas. Important coastal areas within the watershed include the Newport Beach Marine Life Refuge and the Irvine Coast Marine Life Refuge.



Implementing projects that manage urban wet- and dry-weather runoff throughout the watershed can benefit ocean water quality. Recommended are constructed wetlands, local urban runoff treatment systems, surface water diversions to publicly owned treatment works, source controls, and public education.

### **WATER USE EFFICIENCY PILLAR**

*Encourage implementation of advanced metering infrastructure.*

Most customers in the Santa Ana River Watershed are metered, but there are still opportunities for advanced metering infrastructure (AMI) or automatic meter reading (AMR). Implementation of these technologies provides information that can detect leaks and help water agencies target water use efficiency programs. Frequent monitoring of use patterns allows water retailers to determine if customers are observing water use regulations. These include local day and time prohibitions as well as those rules imposed by the state, such as the prohibition against outdoor irrigation within 48 hours of measurable precipitation. In conjunction with the meters themselves, there is a growing market for customer portals, giving customers additional data about their own water use.

### **DATA MANAGEMENT AND MONITORING PILLAR**

*Develop a trust framework for data sharing.*

The development of a regional trust framework is needed to establish trust between agencies as well as trust in the functionality of a regional data management system. Developing this agreed-on intent at the regional level will facilitate the establishment of a data management framework that can answer critical regional questions and inform water resource decision makers. Sharing of information and associated privacy considerations will be a critical policy consideration. Appropriate sharing of information will be key to extending this trust framework to individual water resource decision makers who participate as members of the public. The trust framework will also facilitate professional decision making and allow for a proactive, coordinated approach to compliance with state requirements.

## **WHAT'S INCLUDED IN THE OWOW PLAN UPDATE 2018**

The OWOW Plan Update 2018 is available as PDF files that are available on the SAWPA website and elsewhere. The first PDF is the main body, consisting of nine chapters of material. The second PDF is the collected appendices.

The first chapter introduces the OWOW Program, the earlier OWOW Plans, and the watershed planning and management that preceded the OWOW Program—the Santa Ana River has benefitted from nearly 50 years of watershed planning.

Chapter 2 describes in depth the stakeholder processes, the governance model, and how the work of so many is integrated into the OWOW Plan Update 2018. The vision, goals, objectives, and planning targets, described briefly above, are the focus of Chapter 3, which also shares how the OWOW Program will assess its progress toward the goals.

Chapter 4 describes the Santa Ana River watershed in its dimensions as a physical and social space, and shares water and land management realities today. Chapter 5 contains the deep work completed by the Pillar workgroups. Included are the nearly 200 recommended management and policy strategies that, once taken up throughout the watershed, will help achieve the goals of the OWOW Plan Update 2018.

The remaining chapters share additional information that contextualizes the earlier chapters. Chapter 6 describes the process developed during the OWOW Plan Update 2018 process to carry out calls for projects, and then to prioritize activities in the watershed. Chapter 7 contains more information about integrated and sustainable water management and how those practices can yield benefits and other rewards. Chapter 8 has been only slightly updated from the OWOW 2.0 Plan, as its material about the challenges and opportunities to finance this work is still relevant. Chapter 9 describes how the OWOW Program manages the data of the program and reveals a series of data management and analysis tools that have been developed by SAWPA and others that can benefit those implementing IRWM programs and projects.

A number of important appendices follow the main body of the OWOW Plan Update 2018. Deeper analyses of the water supply portfolio, the condition of water quality, and habitat are there. Also included is an updated climate change analysis produced by the U.S. Department of the Interior Bureau of Reclamation (Reclamation), working in partnership with SAWPA. This analysis supported spatial prioritization of climate vulnerabilities for the OWOW Plan Update 2018. Reclamation is a valuable partner in the watershed.

Another significant partnership resulted in one of the appendices. Working with Environmental Science Associates and the Bay Institute, contracted by the California Department of Water Resources (DWR) to support the California Water Plan Update 2018, SAWPA produced an updated watershed assessment tool. Building on the OWOW 2.0 Plan, this tool aligns with the Sustainability Outlook, a critical section of the California Water Plan Update 2018. SAWPA and the stakeholders of the OWOW Program appreciate DWR's commitment to supporting the OWOW Plan Update 2018.

## CONCLUSION

Benefits resulting from the implementation of the OWOW Plan Update 2018, and from the planning process itself, will materialize at different time horizons and will have very different characteristics. While some specific projects will be operational within a couple of years, other more ambitious efforts, such as those requiring significant investment, technological development, or new mindsets and behaviors, could take years or decades to be fully realized. Similarly, some infrastructural projects will provide immediate tangible benefits, while education and engagement programs will result in benefits that are less easily measured, but no less significant.

The development, adoption, and future implementation of the OWOW Plan Update 2018 has yielded and will yield these benefits in the watershed:

- Adoption of a collaboratively developed vision, goals, objectives, and strategies for the watershed to achieve sustainable water management by 2040
- Prioritization of multi-benefit projects – projects that provide benefits to more than one user or subregion of the watershed and that address more than one opportunity or challenge
- Recognition that society, the environment, and the economy are inextricably interdependent, and pursuing improvements in one cannot result in harm or neglect of another
- Consideration of implementable projects and programs that will:
  - Increase the reliability of water supplies
  - Improve water quality
  - Enhance habitat and open space
  - Increase recreational opportunities
  - Prepare for climate impacts and reduce carbon emissions

The OWOW Plan Update 2018 is aligned with the earlier OWOW Plans and continues a legacy of stakeholder-led planning for the watershed. Compliant with the 2016 IRWM Plan Standards, the OWOW Plan Update 2018 will support progress toward sustainable water management through collaborative action, grant-funded implementation, and programs of research and education. Acting together to implement the OWOW Plan Update 2018 will support economic prosperity, social health and equity, and a thriving environment.

The OWOW Plan Update 2018 exists because of the tremendous amount of work that was contributed by the staff of many agencies, non-profit workers, students, consultants, and volunteers of all kinds. The process of crafting it is nearly as important as the OWOW Plan itself will be once it is implemented. Collaborative planning yields partnerships, builds trust, and creates the conditions for the success of sustainable water management and healthy watersheds. Resting on this strong foundation, the OWOW Plan Update 2018 joins its earlier versions as emblematic of collaborative watershed planning.