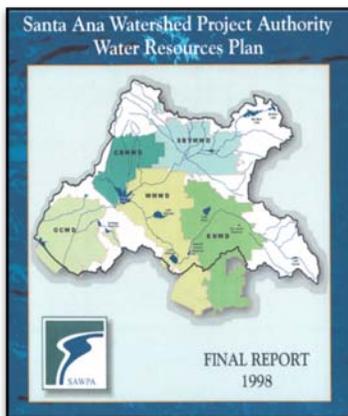


1.4 Relation to Local Water Planning



History of Santa Ana River Watershed Planning

Since its formation, SAWPA and its member agencies have been on the forefront of water resource planning for the region. Initially formed as a regional planning agency in 1967, SAWPA undertook the first water quality management program study for the watershed. These early planning roots provided the important water quality data and analysis for the development of the first Regional Board Basin

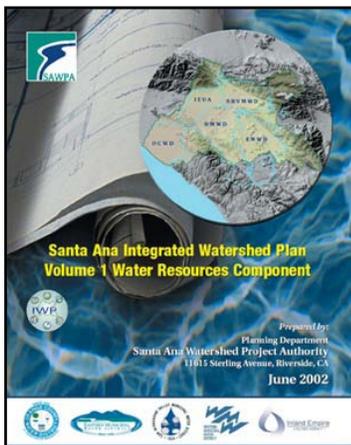


Plan. SAWPA since has worked closely with the Regional Board in all Water Quality Basin Plan Updates and watershed planning efforts.

The 1998 SAWPA Water Resources Plan was one of the first watershed-wide water resource plans undertaken by SAWPA to optimize all available water resources in the watershed in an integrated fashion. This plan was initiated after Metropolitan Water District of Southern California (MWDSC) had kicked off their first Integrated Resource Plan in 1995. Because only three of the five SAWPA member agencies were MWDSC member agencies, the SAWPA Commission directed staff to prepare a similar water resource plan for the watershed that would examine all available water resource development opportunities and assets within the watershed. With one of the SAWPA member agencies,

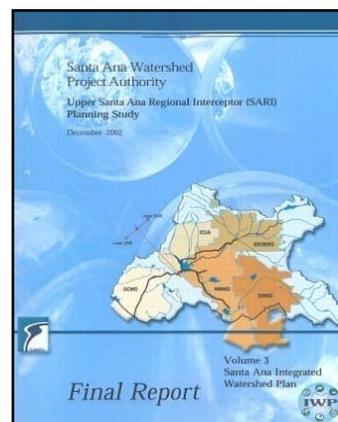
San Bernardino Valley Municipal Water District, also serving as an additional importing water agency and State Water Project Contractor within the watershed besides MWDSC, new water resource development projects were identified. This 1998 Plan was prepared entirely by SAWPA's planning staff.

In 2002, SAWPA updated and expanded the water resources planning in its Santa Ana Integrated Watershed Plan (IWP), a three-volume planning document that examines water resource management strategies to address regional needs in an integrated fashion. Water resource management strategies identified in this report included water storage, water quality protection and improvement, water recycling, storm and flood water management, and environment and habitat protection.

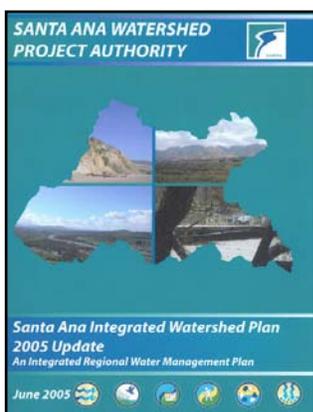


The first volume of the IWP is the Water Resources Component, a planning document that built upon member agency long-term water resource plans and management programs, thus providing a vehicle to ensure effective and concerted planning efforts on a regional basis. This volume also describes the necessary water resources projects to achieve zero reliance on imported water supply, and the amount of salt removal facilities necessary to achieve a salt balance in the watershed. The second volume of the IWP is the Environmental and Wetlands Component. It describes the watershed-wide wetlands program and watershed plan that integrates wetlands, trails, habitat, open space, education, and invasive species removal.

The third volume of the IWP is the Upper Santa Ana Regional Interceptor (SARI) Planning Component, which provides a foundational evaluation of the upper SARI, the watershed brine disposal pipeline, and a future long-term beneficial use of the SARI as the critical facility required to meet the SAWPA goal of transporting highly saline, non-domestic discharges out of the upper watershed to protect its groundwater resources.

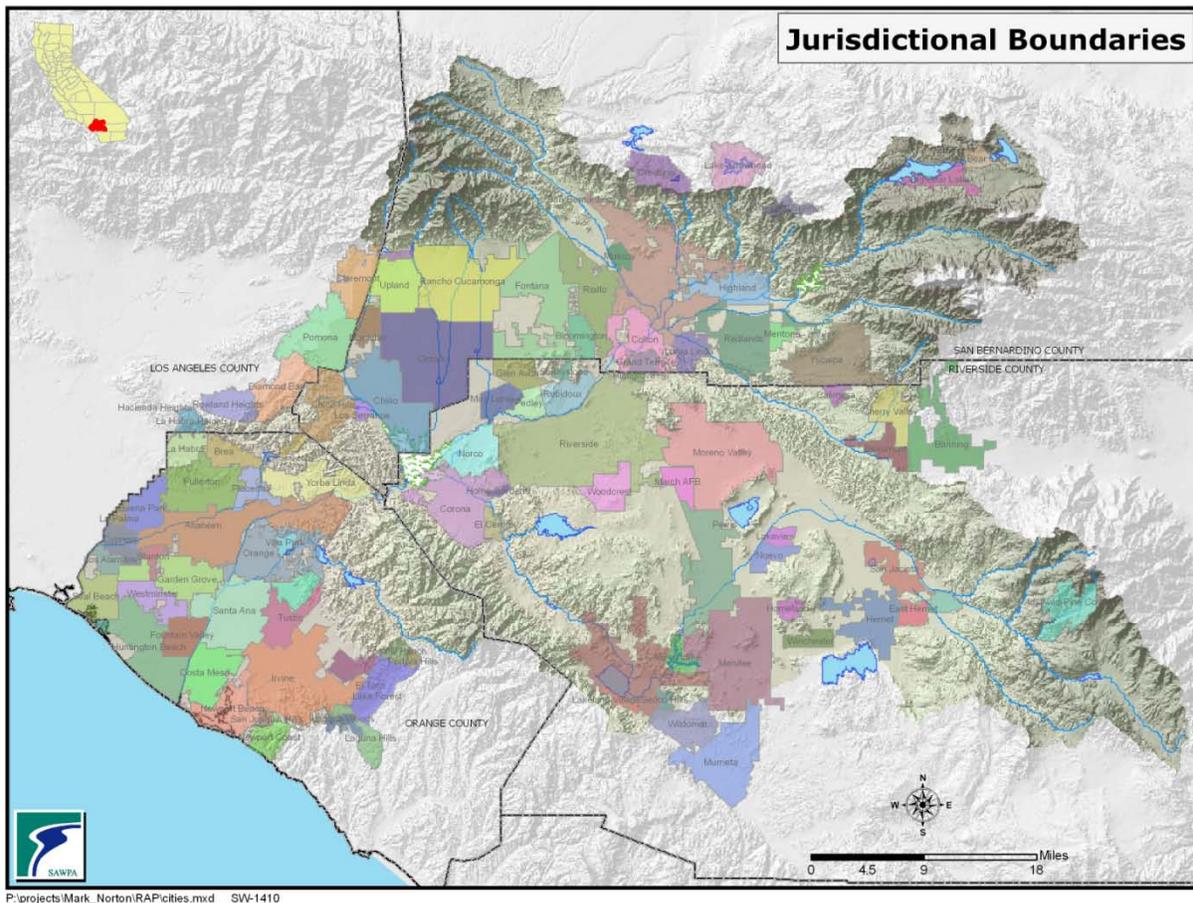


The first two volumes of the 2002 Integrated Regional Water Management Plan (IRWMP) were written and prepared by SAWPA planning staff, with the third volume prepared by SAWPA's consultant, CDM Smith. The 2002 three-volume report describes integrated water projects and provides justification for the first IRWMP in the State, described under the State Proposition 13 Water Bond. The success of this effort provided funding totaling \$235 million for the watershed.



In 2005, SAWPA prepared the Santa Ana IWP 2005 Update, an IRWMP. This report, also prepared by SAWPA planning staff, updated much of the work from the 2002 report incorporating the Urban Water Management Plans (UWMPs) performed by SAWPA member agencies and sub-agencies, and provided an updated listing of priority projects to achieve the goals of the watershed stakeholders. Recognizing the significant size of the watershed in geography and population, and the sheer complexity of coordination and integration of projects, the 2005 report sought to briefly describe and highlight the many detailed resource planning processes and documents that led to a list of proposed prioritized regional projects, as opposed to serving as a detailed technical or scientific water resource evaluation in itself. Because of these efforts, the plan was ranked among

the top ten IRWMPs by California Department of Water Resources (DWR) staff, and provided the justification for \$25 million from Proposition 50 IRWM implementation grant program.



Planning from OWOW 1.0 to OWOW 2.0

Integrated Regional and Sub-Regional Water Management Plans

Efforts to obtain improved water quality, sustainability, and other goals represented in the OWOW 2.0 Plan are practiced by water districts and agencies throughout the Santa Ana River Watershed. The IRWMP illustrates the collaboration of different projects, plans, policies, and task forces between SAWPA and other water agencies that strive to reach these goals. For example, in correlation with the Water Use Efficiency Pillar found in the OWOW 2.0 Plan, most water district/agencies administer programs that help reduce water demand through rebate programs on water efficient appliances, and educate the public through water-wise educational programs were described. Under the Water Resource Optimization pillar, several water resource management strategies are encouraged, including the implementation of water recycling programs. The OWOW 2.0 Plan stresses the importance of recycled water to the watershed as a whole, and suggests innovative approaches of recycled water use in a more cost effective systems approach. Through such project and program implementation, the region can support less dependence on imported water, particularly from the California State Water Project (SWP), constituting about 15%- 20% of the region's imported water. Also, SAWPA and its member agencies take initiative in employing water quality improvement and natural resource stewardship by teaming up with multiple task forces established within the region and sub-regions. OWOW 2.0 has worked with many sub-regional areas to provide assistance and improve overall

sustainability, such as the case of Lake Elsinore water quality improvements sitting at the downstream end of the San Jacinto River sub-watershed. The Plan proponents also have encouraged the continued support for Best Management Practices (BMPs). BMPs have proven to be very useful when applied to water related projects and construction. These BMPs have been executed by various districts in the effort to achieve higher water quality, reduce water demand, and achieve resource stewardship.

The overall success of the OWOW Plan is dependent upon the valuable input and local water planning documents from resource agencies across the watershed, including sub-regional IRWMs, Groundwater Management Plan's, Urban Management Water Plan's, County Flood Controls and Water Conservation Districts, and regional government agencies throughout the watershed. The OWOW 2.0 Plan does not replace or supersede local planning; rather the OWOW 2.0 Plan as a regional plan appropriately incorporates local planning elements. Most of the following sub-regional IRWPs were all developed and executed prior to the OWOW 1.0 Plan, but still serve as important resources to the current OWOW plan.

San Bernardino Valley Municipal Water District Sub-Regional IRWM

San Bernardino Valley Municipal Water District (SBVMWD), as a sub-regional water agency, agreed to lead a planning effort and received a grant from the DWR to prepare their sub-regional IRWMP using Proposition 50 grant funding. The main benefit of this plan was the development of the process for managing the San Bernardino Basin Area, and also to obtain more detailed evaluation of water resource needs in the area. The plan was finalized in November 2007. Similar to the OWOW 2.0 Plan, this particular plan was carefully developed through the participation of water managers and stakeholders within the sub-region. This is a very important factor, integrating water plans either regionally or sub-regionally to help create a more sustainable watershed. The update for this sub-regional plan by SBVMWD is scheduled for the first part of 2014. For more information regarding the SBVMWD sub-regional IRWM visit www.sbvmd.com.

Western Municipal Water District Sub-Regional IRWM

The preparation of the IRWMP for Western Municipal Water District (WMWD) fulfills a need to address long range water supply planning in order to meet the future demands in a rapidly growing area, but also to meet the water supply reliability needs now and in the future. This plan was funded by Proposition 50 and was completed in November 2006. The essence of this IRWMP is the identification and evaluation of water management strategies that could increase local water supply, thereby improving water supply reliability. Additional benefits of the IRWMP are to address local and regional water quality issues; this process was started with discussions of WMWD's member agencies and stakeholders. No plans are anticipated at this stage to update this sub-regional plan by WMWD. For more information regarding the WMWD sub-regional IRWM visit www.wmwd.com.

San Jacinto River Watershed Sub-Regional IRWM

The San Jacinto River IRWMP integrates input from a wide variety of organizations and individuals with a stake in water resource management issues. Development of this report was led by the San Jacinto River Watershed Council (SJRWC) with financial and in-kind support from a number of member and partnering agencies such as SAWPA, as well as local, State, and Federal government agencies, water suppliers, environmental groups, trade organizations, businesses, and individuals. Through a collaborative process, the San Jacinto River Watershed stakeholders were able to identify resource management strategies and associated sub-objectives that improved their sub-region. If improvements are made on a sub-regional level, it only makes the process of implementing the OWOW 2.0 Plan more efficient. No plans

are anticipated at this stage to update this sub-regional plan by SJRWC. For more information regarding the San Jacinto Watershed sub-regional IRWM visit www.sawpa.org/collaboration/projects/san-jacinto-river-watershedcouncil.

Central Orange County Sub-Regional IRWM

The Central Orange County IRWMP addresses critical water resource management needs for the Newport Bay Watershed and the Newport Coast Watershed. This plan was completed on September 2012. Within this developed area are fragile coastal ecosystems with designated critical coastal areas and areas of special biological significance. The Central Orange County sub-regional IRWMP incorporates the tenets of integrated regional water management planning to address challenging issues related to flood risk management, water quality, water supply, habitat, balanced environmental sustainability, and collaboration. It was developed with stakeholder input from a diverse set of views to develop a common vision of the most urgent resource needs within the watersheds. The purpose of the Central Orange County Plan is to provide a bridge between existing and developing watershed planning efforts, allowing collaboration that is more effective and more opportunities to leverage agency resources across jurisdictions. For more information regarding the Central Orange County sub-regional IRWMP, visit ocwatersheds.com.

Santa Ana Regional Board Basin Plan

The State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards (Regional Boards) are responsible for the protection and, where possible, the enhancement of the quality of California's waters. The State Board sets statewide policy, and together with the Regional Board, implements State and Federal laws and regulations. Each of the nine Regional Boards adopts a Water Quality Control Plan, or Basin Plan, which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's ground and surface waters, and local water quality conditions and problems. The Santa Ana River Region includes the upper and lower Santa Ana River Watershed, the San Jacinto River Watershed, and several other small drainage areas. The Santa Ana River Region covers parts of southwestern San Bernardino County, western Riverside County, and northwestern Orange County. The Basin Plan for the Santa Ana River Region is more than just a collection of water quality goals and policies, descriptions of conditions, and discussions of solutions. It also is the basis for the Regional Board's regulatory programs. The Basin Plan establishes water quality standards for the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the Regional Board and others that are necessary to achieve and maintain the water quality standards. For more information regarding the Santa Ana River Regional Board Basin Plan visit www.swrcb.ca.gov.

Urban Water Management Plans

The UWMP developed by retail agencies in the watershed have served as a valuable resource to the OWOW planning effort particularly to the Water Resource Optimization Pillar in evaluation of water demands and supplies. The UWMPs are prepared by California's urban water suppliers to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. Every urban water supplier that either provides over 3,000 acre-feet of water annually or serves more than 3,000 or more connections, is required to assess the reliability of its water

sources over a 20-year planning horizon, considering normal, dry, and multiple dry years. This assessment is to be included in its UWMP, which is to be prepared every five years and submitted to the DWR. SAWPA has gathered all the UWMPs for this region for analysis.

One big difference observed in the 2010 UWMPs used for the OWOW 2.0 plan over previous OWOW planning, was the inclusion of SBX7-7 water conservation requirements. Reporting on agency plans to reduce overall agency water use by 20 percent per capita by the year 2020 was supported by legislation passed in November 2009 as a new requirement. Water demand is very important to urban areas, so it is vital that these areas practice water use efficiency to the fullest extent. In addition, local agencies are encouraged to ensure the reliability of local supplies in any natural event. These practices encompass a broad range from Water Use Efficiency Programs to groundwater desalination plants. The value of these local Water Use Efficiency Programs is the need to transfer BMPs for water use efficiency successfully practiced by one agency over other agencies, so that efficiency in programmatic development and implementation result. OWOW 2.0 has recognized the importance of water use efficiency by acknowledging this as its own Pillar, the Water Use Efficiency Pillar, serving as a roundtable forum to share techniques and procedures to reduce water demand and increase supply. The work from this Pillar is integrated with other pillars, particularly as implementation actions are suggested resulting from the Water Resource Optimization Pillar and the Operational Efficiency and Water Transfer Pillar. Implementation actions can be as simple as checking for leaks throughout a supply line on a regular basis, or implementing more efficient water conveyance strategies through the system. These are only some of the programs and practices encouraged by OWOW.

County Flood Control and Water Conservation Plans

The watershed is home to three different county flood control districts; Riverside County Flood Control and Water Conservation District, San Bernardino County Flood Control District, and Orange County Flood Control District. The OWOW 2.0 Plan has integrated the planning efforts of these different flood control and water conservation districts, as well as offered support in consideration of system-wide projects. Such efforts are discussed in more detail in the Stormwater Resource and Risk Management Pillar of the OWOW 2.0 Plan.

Flood control and water conservation districts and OWOW 2.0 both support implementing a strategy of fully utilizing natural channels and other environmental features within the flood control system, while evaluating opportunities for stormwater recharge as a future drinking water source. Flood control channels and adjoining detention basins can play an important role also in serving as groundwater recharge facilities in the watershed. In turn, fewer negative impacts would be anticipated to the environment, thus protecting surrounding natural habitats. Through the integration of the flood control plans with other local water resource plans, new multi-benefit approaches will continue to be investigated. It is through the implementation of these synergistic solutions that help improve water quality and capture more water for recharge, while meeting the standards in their respective counties. Overall, county flood control and water conservation agencies have a tremendous influence on the sustainability of the watershed by their practices. It is through stakeholder collaboration with these agencies that key system-wide solutions will arise for the future. For more information visit the county flood control websites and **Chapter 5.8 Stormwater: Resource and Risk Management**.

Basin and Ground Water Plans

There are dozens of groundwater basins in the watershed that each require careful planning and monitoring. These groundwater basins play a pivotal role in the sustainability of the Santa Ana River Watershed, and are discussed in more detail under **Chapters 5.4 Water Resource Optimization** and **Chapters 5.10 Operational Efficiency and Water Transfers**.

The West San Jacinto Groundwater Basin Management Plan was adopted in 1995. Annual reports on the status of groundwater and water resources efforts in the area have been published since 1996. The 2007 Annual Report compiled, reviewed, evaluated, and analyzed 2007 groundwater quality and water level monitoring program data, summarized groundwater-related changes, and reported results of an extraction monitoring program and status of previous recommendations.

To the east, the Hemet/San Jacinto Water Management Plan was completed in November 2007 by Eastern Municipal Water District, Lake Hemet Municipal Water District, and the Cities of Hemet and San Jacinto to guide and support responsible water management. The plan's objectives include reducing the historical impact of overdraft caused by past groundwater production, increasing recharge of the groundwater basin, providing for the water rights of the Soboba Tribe, ensuring water supply reliability, providing for planned urban growth, and protecting and enhancing water quality. Options to increase water supply and reliability include developing underutilized sources, particularly recycled water and imported water. To accomplish the plan's objectives, the Hemet/San Jacinto Integrated Recharge and Recovery Program are being implemented. This program includes the construction of numerous water supply and conjunctive use projects such as direct and in-lieu recharge, increased use of recycled water, increased conservation, and improved monitoring.

The Chino Basin Watermaster (CBWM) is the manager of Chino groundwater basin. The CBWM prepared the Optimum Basin Management Plan, which describes the state of the basin in terms of historical groundwater levels, storage, production, water quality, and safe yield. Current and projected water demands and water supply plans are described. The goal of the plan is to develop a groundwater management program that enhances the safe yield and the water quality of the basin, enabling all groundwater users to produce water from the basin in a cost-effective manner. The plan includes a monitoring program for groundwater levels, as well as programs for monitoring well construction, abandonment, and destruction.

The City of Corona prepared a Groundwater Management Plan (GWMP) for the Temescal, Bedford, and Coldwater sub-basins. The conditions of each groundwater basin were described including groundwater levels, production, and quality. Current and projected water demands and supplies were evaluated. Basin management objectives were determined and management strategies were set. The objectives include:

- Managing the groundwater basin in a sustainable manner
- Preventing substantial water level declines in the Channel Aquifer
- Protecting groundwater quality in the unconfined aquifer
- Maintaining required outflow at Prado Dam
- Monitoring groundwater levels, quality, and storage

The Orange County Water District prepared the GWMP 2009 Update for the Orange County Groundwater Basin to identify key issues related to groundwater management. The three major objectives are to protect and enhance groundwater quality, protect and increase the basin's sustainable yield, and increase the efficiency of operations. Recommendations in the report to proactively manage the basin include:

- Monitoring water quality and groundwater levels
- Managing groundwater recharge
- Managing groundwater quality by controlling seawater intrusion, evaluating emerging constituents, and preventing future contamination
- Implementing projects to clean up existing contamination problems
- Preparing an integrated demand and supply program

These plans are important to the entire area because they help promote water storage, water supply and reliability, and improved water quality. This coincides with the OWOW 2.0 Plan that encourages all districts/agencies to create a sustainable watershed through better development of basin and groundwater plans, and is a brief summary of some types of methods, goals, and objectives being implemented in the watershed. More information may be found in **Chapter 5.5 Beneficial Use Assurance**.

Low Impact Development Planning

Low Impact Development (LID) proves to be a very useful tool both regionally and inter-regionally. LID offers many different multi-beneficial gains once properly developed and utilized. OWOW recognizes the importance of LID and encourages it through the Land Use and Water Planning Pillar. Some of the benefits that projects like these could contribute are increased water supply and improved water quality, while practicing resource stewardship. By using water in an effective manner, the Santa Ana River Watershed comes one more step closer to becoming more sustainable. More information may be found in **Chapter 5.7 Land Use and Water Planning**.

Stormwater Management and Watershed Action Plans

Stormwater management is a crucial part to the development of a more sustainable watershed. Planning for high quality stormwater management allows the Santa Ana River Watershed to improve overall flood control. The plans to implement these strategies mostly are found through local flood control and water conservation districts plans, and watershed action plans required in the MS4 permits for each of the counties in the watershed. The watershed action plans further support the need for collaboration between flood control and water conservation agencies with water agencies in the watershed particularly as regional low impact development practices are considered. OWOW 2.0 has implemented strategies that aid the idea of creating more efficient stormwater management through the increase of stormwater utilization. By doing so, the Santa Ana River Watershed grows in becoming more self-efficient. More information may be found in **Chapters 5.4 Water Resource Optimization, Chapter 5.5 Beneficial Use Assurance** and **Chapter 5.8 Stormwater: Resource and Risk Management**.

Salt and Salinity Management Plans

Another influence OWOW has on regional and sub-regional areas is salt and salinity management. It is important that the salt within the watershed be regulated accordingly in order to improve water quality. This is described more in detail in **Chapter 5.5 Beneficial Use Assurance**. Essentially, salt always has been an issue since the utilization of the Santa Ana River and imported water. Salt always will remain,

which is why the OWOW 2.0 Plan has encouraged the improved management of salt, which has been able to improve the quality of water throughout the Santa Ana River Watershed. SAWPA has been a leader in the State in preparing salt and nutrient management plans with ongoing triennial reporting of groundwater management zone salt and nitrogen monitoring, as well as annual reporting of salt and nutrients in the Santa Ana River. More information may be found in **Chapter 5.5 Beneficial Use Assurance**.

Emergency Response/Disaster Plans

OWOW supports the integration into the current OWOW 2.0 Plan of emergency and disaster planning in relation to water resources. All major water agencies have an Emergency Response Plan or a Disaster Plan that were used as a resource in evaluating a multi-hazard preparation response. The purpose of these plans is to be prepared for any type of possible event, natural or unnatural. These events typically include storms, earthquakes, drought, or terrorist attacks. Being prepared for any of these disasters allows each sub-region to be self sufficient for a period of time. More information may be found in **Chapter 5.8 Stormwater: Resource and Risk Management**.

Forestry Service/Fish and Game Planning

Located within the Santa Ana River Watershed are three national forests: the Angeles National Forest, which covers over 650,000 acres and is located northwest of the Watershed; Cleveland National Forest, which covers 460,000 acres and is located in the southern area of the watershed; and San Bernardino National Forest, which covers over 670,000 acres and is located in the northern and eastern areas of the watershed. National forests provide habitat and a safe haven for threatened and endangered plants and animals, as well as provide people with opportunities for recreation in a natural environment. OWOW 2.0 safeguards natural habitats through its Natural Resources Stewardship Pillar. These influences help protect the natural environment and water supplies.

The watershed receives the majority of its local water from rain and snow fall in and around the San Bernardino, San Geronio, and the San Jacinto Mountain's forest areas. Precipitation in these areas provides surface water and groundwater basin recharge throughout the region. SAWPA's involvement and implementation of the OWOW 2.0 plan have been able to properly assist in forest planning efforts related to water recharge. These efforts help reduce the risk of any resulting physical, chemical, and biological impacts due to wildfires, which preserves the water that is captured within the forest. In correlation with the Natural Resources Stewardship Pillar, OWOW 2.0 was able to support the California Department of Fish and Wildlife (CDFW), to help protect natural habitats of certain species along the Santa Ana River. OWOW 2.0 also supports TMDL Nutrient Monitoring and Fishery Enhancements, which have given indigenous species vital habitat to call home in the Santa Ana River Watershed.

Through collaborative interests, developers of the OWOW 2.0 Plan, the USDA, the Forest Service San Bernardino National Forest, and Cleveland National Forest were able to create the Forest First Initiative. The purpose of this initiative is to encourage further cooperation among the Forest Service and downstream groundwater management agencies, recharging agencies, flood control and water conservation districts and resources agencies to proactively improve the resilience of the watersheds in the Santa Ana River Watershed that are critical in delivering quality water supplies. This initiative, through involvement of the OWOW 2.0 Plan, was able to offer multi-beneficial results both regionally and inter-regionally by providing high quality water to its constituents. More information may be found

in **Chapters 2.3 Collaboration, Coordination and Integration** and **Chapter 5.9 Natural Resources Stewardship**.

Table 1.4 – 1 Plans Supporting OWOW 2.0

Plans Supporting OWOW 2.0	
Santa Ana River Waste-load Allocation Model Report - May 2009	West San Jacinto Groundwater Basin Management Plan 2011
Eastern Municipal Water District Urban Water Management Plan 2010	Hemet/San Jacinto Water Management Plan 2011
Inland Empire Utilities Agency Urban Water Management Plan 2010	RWQCB Water Quality Control Plan for the Santa Ana River Basin 2011
Municipal Water District of Orange County Urban Water Management Plan 2010	North Orange County Watershed Management Area Integrated Regional and Coastal Watershed Management Plan 2011
San Bernardino Valley Municipal Water District Urban Water Management Plan 2010	County of Orange Health Care Agency- Environmental Health Annual Ocean and Bay Water quality Report 2011
Western Municipal Water District Urban Water Management Plan 2010	Eastern Municipal Water District Sewer System Management Plan (SSMP) 2011
San Jacinto River Integrated Regional Water Management Plan 2010	2011-2012 Engineer’s Report on the Groundwater Conditions, Water Supply and Basin Utilization in the Orange County Water District
San Bernardino Valley Municipal Water District Habitat Conservation Plan 2010	2011-2012 Report on Groundwater Recharge in the Orange County Groundwater Basin
Addendum to the 2008 Santa Ana River Waste-load Allocation Model Report Scenario 7 - July 2010	2012 Sampling Report for Emerging Constituents in the Santa Ana Region
Model Water Quality Management Plan Orange County Watershed 2011	Irvine Ranch Water District Energy and Green House Gas Master Plan 2012
Orange County Natural Communities Conservation Plan 2011	Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin Bunker Hill – A, Bunker, Hill – B, Lytle, Rialto, and Colton Management Zones – July 18, 2013
Total Dissolved Solids and Nitrate-Nitrogen Projections for the Beaumont Management Zone prepared by Wildermuth Environmental Inc. - April 29, 2011	Riverside County Watershed Action Plan: Santa Ana Region 2013
Bay Delta Conservation Plan 2011	2012 Annual Report of Santa Ana River Water Quality July 2013
Re-computation of Ambient Water Quality in the Santa Ana Watershed for the Period of 1990 to 2009 - Aug. 2011	NMFS’ Southern California Steelhead Recovery Plan (2012) and recovery plans for endangered and threatened species found within the Santa Ana River watershed.