

## Case Study: Council for Watershed Health

**Watersheds:** Los Angeles River and San Gabriel River watersheds

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Year	Grant Program	Project Title	Watershed	Grant Amount Awarded	Matched Funding Amount
2004-2007	Department of Conservation-Watershed Coordination Grant	Watershed coordination for the Los Angeles and San Gabriel Watersheds	Los Angeles/San Gabriel Watersheds	\$249,854	\$133,693
2008-2012	Department of Conservation-Watershed Coordination Grant	Watershed coordination for the Los Angeles and San Gabriel Watersheds	Los Angeles River Watershed	\$274,631	\$683,768
2011-2014	Department of Conservation-Watershed Coordination Grant	Watershed coordination for the San Gabriel River	San Gabriel River	\$294,658	\$927,582
2000-2005	CalFed Watershed Program	Los Angeles and San Gabriel Rivers Watershed Council Organizational Development	Los Angeles, San Gabriel River	\$288,000	\$813,000
2000-2005	CalFed Watershed Program	Study of Augmenting Groundwater Supplies Through Capture of Urban Runoff	Los Angeles, San Gabriel River	\$971,800	\$384,500
2007-2010	CalFed Watershed Program	Ecosystem Values of Watersheds in Southern California	Los Angeles River; San Gabriel River	\$391,994	\$55,604
2007-2010	CalFed Watershed Program	Sun Valley Neighborhood Retrofit Demonstration	Los Angeles River	\$859,952	\$1,552,307

This case study assesses seven grants received by the Council for Watershed Health for work in the Los Angeles and San Gabriel River Watersheds. The findings of this research are based on interviews with stakeholders involved in processes covered by the grants, as well as a review of documents associated with the grants.

### Los Angeles and San Gabriel River Watersheds

The Los Angeles River Watershed is 824 square miles in size with approximately 500 square miles of heavily developed areas. The river's headwaters originate in the Santa Monica, Santa Susana, and San Gabriel Mountains, stretching 55 miles through the San Fernando Valley to Long Beach where it joins the Pacific Ocean. Highly developed residential and commercial areas make up the San Fernando Valley. Major tributaries to the river in this segment are the Pacoima Wash, Tujunga Wash, Burbank Western Channel, and Verdugo Wash. While much of the river is concrete-lined, a soft-bottomed segment remains in Sepulveda Flood Control Basin, a 2,150-acre area in the San Fernando Valley designed to collect flood waters during storms. A rocky, unlined

bottom remains in the Glendale Narrows, the section of the river that is publicly used for hiking, horseback riding, and bird watching, and runs through Griffith and Elysian Parks. South of the Glendale Narrows, major tributaries to the Los Angeles River include the Arroyo Seco, the Rio Hondo, and Compton Creek. From its confluence with the Arroyo Seco to the Pacific, the Los Angeles River is surrounded by residential, commercial, and industrial infrastructure including rail yards, freeways, government and commercial buildings, and major refineries and petroleum products storage facilities. Water quality in the middle and lower watershed are impaired due to the density of urban activities and high levels of pollutants associated with stormwater runoff.

The San Gabriel River Watershed is in southeastern side of Los Angeles County and is 689 square miles in area. The River's source begins in the San Gabriel Mountains and extends to Long Beach where it joins the Pacific Ocean. The San Gabriel River is hydraulically connected to the Los Angeles River by the Whittier Narrows Reservoir. Much of the upper portion of the watershed contains undisturbed riparian and woodland habitats within the Angeles National Forest and San Gabriel Mountains National Monument. The East and West forks of the San Gabriel are heavily used by recreationists. The river is concrete-lined in the lower, urbanized portion of the watershed. Water quality in the middle and lower watershed is impaired due to high levels of residential and commercial activities, as well as the presence of several landfills.

## **Organization & Grants**

Previously known as the Los Angeles and San Gabriel Rivers Watershed Council, the nonprofit changed its name to the Council for Watershed Health in July 2011. The mission of the organization is to advance the sustainability of the region's watersheds, rivers, stream and habitat through science-based research, education, and inclusive stakeholder engagement. Founded in 1996, the organization provides leadership, guidance, and technical assistance to agencies and organizations to promote sound watershed planning and management practice.

The Council for Watershed Health received four project grants and three coordination grants throughout the course of the CalFed Statewide Watershed Program. The four project grants (two in 2000 and two in 2007) were used to build organizational capacity, develop partnerships, and assess best management practices for stormwater capture and groundwater infiltration systems. In addition to the support for the watershed project grants, the Council for Watershed Health received three coordination grants (2004-2007; 2008-2012; 2011-2014) enabling the organization to maintain a watershed coordinator for ten consecutive years. Several grants overlapped, providing financial support to develop projects from conception through implementation. Project grants piloted best management practices and monitored on-the-ground impacts, which in turn, paralleled workshops hosted by watershed coordination funding.

## **Project Grant (2000)- Organizational Development**

One of the project grants received in 2000 funded the “Los Angeles and San Gabriel Rivers Watershed Council Organizational Development” project. Although the grant was awarded as a project grant, the funding supported staff for the purposes of expanding community and organizational capacity to manage the watershed. The idea was to transition from voluntary staff to sponsoring a full-time professional to develop in-house capacity. Hired staff could foster a collaborative network by establishing partnerships and assisting in the development of the organization, advancement of projects, and creating long-term fiscal support for Council for Watershed Health staff.

To qualify for the CalFed grant, the group had to demonstrate how project outcomes would positively impact the Bay-Delta Region, which in turn, shaped project goals. Goals included: 1) managing the watershed for sustainable economic vitality, environmental health, and sustainability; 2) assisting communities in efficient water use; 3) restoring wildlife habitats; 4) improving water quality to support recreation; 5) maintaining outreach efforts; and 6) establishing an ongoing relationship with the CalFed watershed program.

### **Project process and outcomes**

The framing of this project grant was similar to a coordinator grant and set the stage for 10 years of Department of Conservation coordination funding, enabling the Council for Watershed Health to increase outreach, technical capabilities, and funding support. The funding augmented staff salaries based on the amount of time devoted to CalFed Watershed Program activities. One distinction from the coordinator grants is that these funds were divided among numerous staff positions with portions allocated to the executive director, office manager, and staff positions for outreach services and technical support.

Staff supported by CalFed funds conducted outreach efforts to engage with the public at monthly stakeholder meetings and quarterly newsletters. Through their outreach efforts, the Council for Watershed Health formed partnerships with other organizations and expanded information sharing networks with the Lower Los Angeles Rivers and Mountains Conservancy and the Los Angeles County of Public Works. In collaboration with the Los Angeles Regional Water Quality Control Board, the Council for Watershed Health held a workshop on stream restoration. The Council for Watershed Health increased their network of partners through participation in the California Watershed Council Workgroup meetings and the California Watershed Network Forum. Outreach efforts led to long-term partnerships with communities, organizations, and agencies working in the Los Angeles and San Gabriel Rivers Watersheds.

Building organizational capacity was a principle component of grant funding. The grant enabled an expansion of technical capabilities and specifically information systems of the Council for

Watershed Health through the development of a website, equipment and software upgrades, as well as improvement of the organization's Geographic Information System (GIS) capabilities. The website was developed as an outreach and information sharing tool with general topics to reach a wider audience. The grant helped fund a GIS specialist who created base materials for generating map products. The grant also provided financial support for the Council for Watershed Health to enhance their resource collection, refine their accounting system, develop an accounting policy and procedure manual, as well as prepare proposals for additional grant support.

The CalFed grant allowed the Council for Watershed Health to increase their organizational capacity that in turn helped the nonprofit develop other funding opportunities, both from local agencies and from other grant programs. The grant increased awareness and recognition of the capabilities of the organization, as well as the role of the Council for Watershed Health in the watershed as a collaborator, organizer, information hub, and facilitator. While many of the goals presented in the grant were achieved, there were shortfalls in producing publications, an outcome described in grant objectives.

### **Project Grant (2000)- Augmenting Groundwater Supplies & Project Grant (2007)-Sun Valley Neighborhood Retrofit Demonstration**

A second project grant received by the Council for Watershed Health in 2000 funded the "Study of Augmenting Groundwater Supplies through Capture of Urban Runoff" project. This grant laid the foundation for the overall Los Angeles Basin Water Augmentation Study (WAS) in which the Council for Watershed Health researchers tested and established water infiltration solutions that not only increase supplies of water, but also reduce water quality impacts from urban runoff. The project culminated with the 2007 "Sun Valley Neighborhood Retrofit Demonstration" project. The demonstration project directly emerged from the research stage of this project. These two grants are discussed together.

The purpose of the 2000 CalFed grant was to conduct a preliminary feasibility study of capturing urban stormwater to increase groundwater supplies. Objectives of this grant were: 1) assess water quality implications of infiltrated urban runoff; 2) assess effectiveness of various infiltration BMPs in reducing pollutants; 3) quantify the amount of stormwater that could be secured; and 4) develop an implementation plan to deploy infiltration devices in appropriate locations, and guidelines for sustainability.

The 2007 CalFed grant aimed to demonstrate an integrated, comprehensive approach to resource management through a retrofit of Elmer Avenue, a residential street. The project utilized BMPs to manage runoff, pollution reduction, and flooding, while also promoting water conservation and urban wildlife habitat enhancement.

## Project process and outcomes

The Council for Watershed Health initiated the Water Augmentation Study for the purposes of capturing water, improving surface pollution issues, mitigating flooding, and augmenting water supplies. In addition to the CalFed grant, funding was provided by larger water entities, including the Metropolitan Water District (MWD) and the Los Angeles Department of Water and Power (LADWP). Funding supported the Council for Watershed Health to implement multiple phases of research to understand pollution trends and the relationship between urban water infiltration and soil and water quality. This led to the installation of 5 BMPs on various land uses with different methods of infiltration to increase demonstration project variety and monitor several methods (e.g., trench drains, bioswales, and underground infiltration galleries).

Phase I was initiated in 2000 with monitoring a retrofit of “Hall House,” a residential site, with the intention of retaining all stormwater onsite. The Hall House project was implemented by TreePeople, a partner non-profit, using other funds. Following two years of monitoring the Hall House pilot, several sites were added for monitoring purposes with Proposition 50 and Proposition 15 funds in 2003. Additional pilot sites included retrofits for the IMAX (commercial in Santa Monica) and Broadous School in Pacoima. The Council for Watershed Health installed the monitoring equipment for the pilot sites, as part of the first phase of the CalFed grants. The final phase of the project was in part funded by the 2007 CalFed project grant for the Sun Valley demonstration project, a retrofit of Elmer Avenue. Throughout the phased work, the project manager contracted Geomatrix for site assessment and soil monitoring. A technical advisory committee (TAC) oversaw the project, consisting representatives from Metropolitan Water District, the California Department of Water Resources, the City of Santa Monica, Los Angeles County Department of Public Works, United States Department of Interior Bureau of Reclamation, the Los Angeles Department of Water and Power, the Water Replenishment District of Southern California and the State Water Resources Control Board.<sup>1</sup> Two additional nonprofits, TreePeople and Urban Semillas, were contracted by the Council for Watershed Health for the retrofit. The project manager for the Augmentation Study acted as a liaison with the TAC and provided needed outreach and consultation to the community. Through outreach and consultation efforts, residents became more involved with the project, and trust was built among the various stakeholders. Several informants agreed that this was “a model story.” Criteria used to select demonstration project sites included an area: 1) that could accomplish good infiltration; 2) with a larger volume of water on the street; and 3) that is mostly owner occupied. Three places were identified that fit these criteria and staff went door to door knocking

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<sup>1</sup> Funding for the Elmer Avenue project was provided by the U.S. Department of Interior Bureau of Reclamation and California Department of Water Resources (Prop 50). Additional funding and match support were provided by the Los Angeles City Bureau of Sanitation, the Los Angeles City Bureau Street Services, the Los Angeles City Bureau of Street Lighting, the Los Angeles Department of Water and Power, the Los Angeles Department of Water and Power, the Los Angeles County Department of Public Works, the Metropolitan Water District of Southern California, the Water Replenishment District of Southern California, Dr. Bowman Cutter (UCR/Pomona College), Tree People, the University of California Riverside, and the City of Santa Monica Environmental Programs Division.

in the neighborhoods. According to informants, the vast majority of Elmer Avenue community residents were receptive, enthusiastic, and because they community had previous experience in coordinated efforts, almost immediately jumped on board with the whole idea.

While the Elmer Avenue site stands as a demonstration project, maintenance beyond the lifespan of the project is an ongoing concern for some informants, though this concern is not universal. The concern relates to the residents' ability to maintain the system, as bond funding does not cover on-the ground maintenance and upkeep. Residents were charged with these responsibilities. The community is predominately low-income and lacks the financial capacity for repairs. This highlights an environmental justice situation in defining if bioswales are considered water infrastructure and who should be held financially responsible for maintenance. To help ameliorate some of the concerns, the Council for Watershed Health contracted with TreePeople to provide workshops for maintenance and upkeep for residents. Without financial assistance, these workshops built technical capacity for the community to be able to care for the new forms of vegetation and bioswales. Several informants noted the extraordinary participation from community members and viewed the community as a strong partner. Following the completion of the project, the community supported many tours of the site as Elmer Avenue became a demonstration project for water capture and infiltration systems in Los Angeles. However, this does not address the conceivable future financial burdens of repairs.

Succeeding project completion and ribbon-cutting, extensive monitoring to provide information on several best management practices (BMPs), the impact of the project on the community, and data on what is needed in an urban landscape to support a healthy watershed. Monitoring was extensive until funding became sparse. According to participants, Elmer Avenue was the first of its kind in terms of a water capture system as part of a multi-beneficial stormwater project in Los Angeles. Lessons learned from the project influenced later work with Los Angeles native plants, including the creation of a plant palette. The palette was negotiated between the watershed coordinator and architects with the City of Los Angeles. Through research they worked to identify the heartiest and most resilient native plants. This is a key point of overlap between the watershed coordinator grants and the project grant, as the coordinator was involved in developing materials and carrying out trainings for landscape retrofit maintenance and native plant care.

In August 2014, the Sun Valley Multi-Benefit Project received the Envision Platinum award that included the Elmer Avenue project. The award is a nationwide third-party verification and award program that recognizes projects that have achieved higher levels of sustainability. Envision sustainability uses five categories to measure infrastructure projects: quality of life, leadership, natural world, resource allocation, and climate and risk, which all contribute to the scoring of the project's social, economic, and environmental impacts in a community in planning, design, and construction phases of projects. The Los Angeles County Board of Supervisors accepted the

award on behalf of the entire project team. The multi-beneficial nature of the project consisted of flood protection, improved watershed health, increased open space and recreational opportunities, and increased habitat for wildlife.

According to the Institute for Sustainable Infrastructure, the Los Angeles County Public Works Director, Gail Farber, views the success of this endeavor as “the county’s most comprehensive effort to date to include watershed management and sustainability principles into Public Works’ horizontal infrastructure projects. The evaluation of this project by the industry’s leading sustainability rating system has allowed Public Works to benchmark the plan and showcase the County’s ongoing commitment to sustainable practices.”<sup>2</sup>

### **Project Grant (2007)- Ecosystem Values of Watersheds in Southern California**

In 2007, the Council for Watershed Health received a grant to support a project “Ecosystem Values of Watersheds in Southern California.” Documentation for this project grant cycle is limited. Informants identified grant objectives and outcomes. According to informants, the goal of the grant was to create a watershed assessment framework to be utilized in measuring and reporting on the ecosystem and socio-economic benefits and conditions in southern California watersheds. This tool could have provided a structure for evaluating the success of CalFed investment in water management plans.

#### **Project process and outcomes**

As a collaborative process, faculty from the University of California Los Angeles, the University of Southern California, the University of California at Davis, as well as employees of the Forest Service participated in the project, as did staff of the California Office of Environmental Health Hazard Assessment. The starting point for the project was developing a basic understanding of how to define and measure watershed health. Research was conducted to compile a meta-review to understand the extent of which these questions have been explored and documented in previous studies. The Chesapeake Bay Program and Sacramento River Watershed Program were assessed, as these programs were grappling with similar questions.

Arroyo Seco watershed was the pilot for the development of a report card. The report card consisted of a suite of indicators and measurements to determine the condition of the watershed. Owing to the small size of the Arroyo Seco compared with the Los Angeles River watershed, the group determined Arroyo Seco to be a more tractable pilot study.

Outcomes include what one informant described as “neat stuff,” but overall a difficult project. This same informant explained, “We were run over by reality in asserting that big goals can be measured by small indicators. However, we were also the first people asking about working at a

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<sup>2</sup> <https://sustainableinfrastructure.org/envision/project-awards/sun-valley-watershed/>

watershed scale.” Owing to the challenge of capturing an extensive number of relevant variables in a standardized report card, stakeholders considered the urban context a complicating factor. In terms of “success” the group admittedly did not reach their aspirations as the process proved to be demanding due to the complexity of assessing all aspects of watershed health. The research did yield “Southern California Watershed Assessment Framework,” an ecological, economic, and social health assessment framework, piloted with the Arroyo Seco River watershed.

Following the end of the grant, the working group received a grant from the Environmental Protection Agency to build on the work conducted for the Arroyo Seco report card and expand to other watersheds such as the Los Angeles River Watershed. Following the first EPA grant, the working group counted on receiving a second follow-on grant from the EPA to complete the work, but the EPA went in a different direction with their next grant cycle. The working group was unable to complete the project due to lack of funding.

The meta-study proved to be more than they bargained for but valuable from a learning standpoint. Lessons learned from the project include a realization that there are important characteristics in a watershed that may be challenging to measure, but are worthwhile to include to lay the foundation for determining and achieving watershed objectives, such as social structure and relationships. The social structure and relationships within a watershed-community can impact the success and/or failure of watershed initiatives; the watershed-community can also experience the benefits and/or shortcomings of work in the watershed (e.g. improvements in water quality and quantity, maintenance of projects, restoration work on public and private land). One stakeholder emphasized the importance of avoiding the fallacy that “if you don’t measure it, you can’t change it.”

### **Watershed Coordination Grants**

The Council for Watershed Health received three successive watershed coordination grants for the Los Angeles River and San Gabriel River watersheds (2004-2007; 2008-2011; 2011-2014). The goals of all three coordination grants focused on sustainable landscape practices and low impact development. One watershed coordinator pursued the objectives related to sustainable landscape for 10 years. A second watershed coordinator joined for several years (2011-2014) with a slightly different role and different funding, focusing on the Compton Creek Watershed, initiating a Compton Creek Watershed Management Plan and Steering Committee, attending watershed-related meetings across the lower Los Angeles watershed and sharing information and updates among stakeholders.

## **Watershed Coordination (2004-2007)**

The first watershed coordination grant aimed “to develop and promulgate a program that highlights both the water conservation and ecosystem restoration benefits of sustainable landscape practices” in the Los Angeles and San Gabriel watersheds. The Department of Conservation granted \$249,854 in coordination funding. The watershed coordinator received 54% additional financial support from the state, totaling to \$133,693.

### **Process and outcomes**

Prior to applying for the DOC Watershed Coordination grant, the Council for Watershed Health formed a Landscape and Ethic Committee with participants from the California Native Plant Society, Rancho Santa Ana Botanic Garden, Metropolitan Water District, TreePeople, North East Trees, the Rivers and Mountains Conservancy, and the Los Angeles Unified School District, among other organizations. The voluntary committee included both board members and non-board members of the Council for Watershed Health. The purpose of the committee was to promote sustainable landscaping initiatives. As the Landscape and Ethics Committee (Committee) was developing, the watershed coordinator grant opportunity emerged. The Committee needed staff support and accordingly the Council for Watershed Health applied for and received a watershed coordinator grant that was used to hire a staff person for the sustainable landscape effort.

The Committee initially concentrated on policy development for sustainable landscapes. However, upon the arrival of the watershed coordinator and following the guidance of the committee, the coordinator shifted the focus away from policy and towards educational efforts. While the Committee set the direction, one former committee member stated, “The watershed coordination maintained a level of autonomy.” Educational efforts consisted of some informative projects for the general public, with the bulk of the efforts focused on educational programs targeting professionals. According to one informant, owing to the abundance of nonprofits working in the area, the focus of the Council for Watershed Health geared their efforts towards professionals, a targeted group that lacked access to low impact development/sustainable landscape professional and continuing education programs.

The watershed coordinator developed a website and database for native landscaping species recommendations known as the Plant Profiler.<sup>3</sup> To promote the functionality of the website, the watershed coordinator gave presentations, building awareness of the tool. The site is still active and is a resource used by landscape architects, biologists, and planners for ecological restoration and landscaping in the watershed. With additional funding from the California Department of

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<sup>3</sup> The Plant Profiler. (n.d.). Retrieved June 08, 2017, from <http://www.theplantprofiler.com/>

Food & Agriculture, the watershed coordinator also developed WeedWatch, another information-sharing and outreach effort. WeedWatch increased awareness of invasive species and included a poster and wallet card with a list of the “Terrible Ten” invasive plants. WeedWatch material is still being distributed. With the help of the watershed coordinator, the Metropolitan Water District overhauled the agency’s plant list for landscape projects, removing invasive species and high-water use vegetation, and replacing these with native plants. Lastly, the watershed coordinator published a SAFE Landscapes calendar and guidebook to provide tips and create a better understanding of invasive species.

The watershed coordinator planned and organized both on-the-ground demonstration workshops, as well as informative landscape seminars. One on-the-ground project presented native and water-efficient plant landscaping at Griffith Observatory. The coordinator organized five landscape seminars catering to landscape designers, builders, architects, and planners. For the seminars designed for professionals, experts presented on the most up-to-date innovations with sustainable landscaping techniques and native vegetation. Without continuing education programs in the landscaping profession, the seminars provided the latest tools and techniques for watershed-friendly landscaping and water conservation techniques for over 160 professional participants during this grant cycle. Sustainable Landscape seminars have continued with over 1000 participants learning best practices, policy updates, and participating in site tours. Prior to the seminars, awareness of native plants among landscape professional was low and there were no native plant nurseries in the area. Complimenting this effort, the watershed coordinator co-developed a Native Seed Resources Program, providing native plant seeds to growers for watershed restoration, landscape development, and to help sustain populations of native plants.

Reflecting on these efforts, stakeholders observed a transformation in the perception of landscaping professionals and from little consideration of watershed implications to a more pervasive understanding of water management and native plants in landscaping. Native plant nurseries have emerged and are an ongoing effort, as obtaining native plants in large quantities remains a challenge for large landscape projects. Additionally, disparate groups were brought together creating a community of landscape planners and architects that did not previously exist.

### **Watershed Coordination (2008-2011)**

The Council for Watershed Health received a second watershed coordination grant (2008-2011) for continued work on water conservation and sustainable landscaping. Specific grant objectives included: 1) increase the use of native and water efficient plants with the adoption of policies and landscape ordinances by local jurisdictions; 2) augment the availability of local native plants appropriate for habitat restoration and river adjacent landscaping initiatives; 3) reduce the use of invasive plants that degrade wildlife habitat, water quality and supply; 4) educate and inspire groups such as master gardeners, garden opinion leaders, landscape and garden design, build and

maintenance professionals and public officials; 5) collaborate and coordinators with other watershed organizations to support the development of regional programs; 6) share our high quality water use efficiency and ecosystem restoration materials; and 7) develop funding opportunities to sustain watershed efforts in the region. The Department of Conservation granted \$274,631 for this round of coordination grant funding. The watershed coordinator raised \$683,768 in additional funding for projects in the watershed. Work focused on the Los Angeles watershed during this round of funding.

### **Process and outcomes**

The second coordination grant (2008-2011) leveraged on the successes of the first coordination grant (2004-2007) received by the Council for Watershed Health. Sustainable landscape seminars continued, with ten additional seminars held during this grant cycle. Local water supply and reliability of water supply were two additional topics covered by the seminars. Over 500 professionals participated in the seminars with 90% of 586 seminar participants' surveyed stating "they would work to improve their water use efficiency by implementing some of the landscape design and maintenance practices they learned about during the workshop." The Landscape Ethics Committee continued to meet and provide guidance to the watershed coordinator during thirty meetings with agencies and organizations.

In addition to professional seminars, the watershed coordinator partnered with the County of Los Angeles to develop the Drought Tolerant Landscape Ordinance resulting in 34 cities in the county updating their own landscape ordinances for more sustainable practices. Following a similar theme, the watershed coordination worked with the Los Angeles Unified School District to assist in the repeal and replacement of the District's Approved Plant List, with a list of drought tolerant plants. Finally, the watershed coordinator partnered with the City of Los Angeles to train 50 of their employees, as well as participants from the North East Trees on sustainable landscape practices and maintenance.

Taking a landscape level approach, the watershed coordinator addressed the relationship between fire and watershed health. In 2009 there was a devastating fire, the Station Fire, at the San Gabriel Mountains Station. The watershed coordinator held a symposium on post-fire natural resource conservation and recovery challenges with 132 participants. With matching funds from the National Park Service, the watershed coordinator increased fire awareness by distributing 48,000 sustainable and fire landscape calendars and guidebooks.

The watershed coordinator assumed various roles and partnered with numerous organizations to improve the use of drought tolerant plants and invasive plant management. The coordinator was chair of the Los Angeles County Weed Management Area (WMA) group that administered an invasive species management program, distributing ten small grants for weed control. Part of the

program included a community lending program for weed control tools, development and distribution of literature on the benefits of weed removal, and replanting with water efficient plants. Working with the City of Los Angeles Green Gardener Program, the watershed coordinator assisted in curricula development to train 120 gardeners in water use efficiency and the benefits of ecosystem restoration. Other water use efficiency endeavors included a partnership with the County of Los Angeles Parks and Recreation Department to develop a recycled and reclaimed water forum.

### **Watershed Coordination (2011-2014)**

The final coordination grant received by the Council for Watershed Health maintained the overarching goals of promoting sustainable landscaping, yet also expanding into a few additional realms as demonstrated by the extensive list of objectives. These included: 1) promote the adoption by cities of low impact development (LID) ordinances and related standards; 2) increase the amount of local water supply by increasing storm water infiltration through decentralized strategies; 3) acquire funding and create partnerships that will upgrade existing storm water drains; 4) acquire funding and create partnerships that will upgrade existing storm water control infrastructure to improve water quality, including trash separation devices and low flow diversion systems; 5) promote water quality improvement projects identified through previous DOC watershed coordination and the IRWM groups; 6) improve water quality through reducing non-point discharges from nurseries, irrigated agriculture, and open space lands; 7) teach landscape professionals best management practices for designing, installing, and maintaining low water use landscapes; 8) encourage municipalities to adopt land-use policies that protect open space and affect the development of open space lands in the watershed; 9) identify and prioritize parcels for land acquisition throughout the watershed; 10) encourage private land trusts and public agencies to collaborate closely on strategies to increase protected open space lands; 11) initiate watershed management plans where they have not been completed; 12) remove invasive, non-native plant species from riparian and wetland habitat; 13) reduce the demand for and purchases of invasive, non-native plants by landscapers and residents; 14) leverage DOC funding by collaborating with watershed coordinators around the region to support the development of regional programs with a goal of improving quality water use efficiency and ecosystem restoration materials; 15) communicate the results of this project to demonstrate the value of sustained funding for watershed coordination.

For this final coordination grant, two coordinators worked part-time with the Council for Watershed Health in the San Gabriel watershed. The watershed coordinator that was hired for the first two grants (water coordinator 1) remained and continued to work on sustainable landscaping. The second watershed coordinator (watershed coordinator 2) worked to develop relationships and partnerships with other groups in the watershed.

Watershed coordinator 1 continued the sustainable landscape and low impact development seminars, reaching over 300 participants during this grant period. Related to the continued efforts, the watershed coordinator aided in the development of the Native Seed Resource Coalition. The coordinator developed partnerships with the Los Angeles City Engineering, the National Park Service, the California State Parks to build a cooperative nursery network to provide local native plants to support community-based restoration projects in the watershed. Additionally, the watershed coordinator developed a symposium on sediment management in the Los Angeles Basin allowing for the public, and agencies, like the Los Angeles County Department of Public Works, to learn about sustainable sediment management plans in the region. Approximately 100 water agencies and public work personnel participated in this event. Due to the 2009 Station Fire and 2010-2011 winter of heavy precipitation, large volumes of sediment entered flood-controlled areas and water conservation infrastructure, sparking more stakeholder interest.

Watershed coordinator 2 attended watershed meetings throughout the San Gabriel River Watershed. By sharing information from one meeting to another, the watershed coordinator worked to raise awareness among groups of on-going watershed activities. An informant discussed how watershed activities remained in silos, with many organizations working in the watershed separately. The coordinator worked to break down these silos to create partnerships and encourage multi-purpose projects. For example, according to one informant, the county was planning bike trails and the city was planning a park in the same vicinity simultaneously, but without knowledge of the other project. Watershed coordinator 2 connected these two parties, which led to a joint, multi-beneficial project.

Other projects either highlighted by a coordinator or contained within a final report include: involvement in the City of El Monte's MS4 Permit compliance; distribution of an annual landscaping lightly calendar to homeowners; the development of a landscaping lightly workshop held at the Los Angeles County Arboretum with 310 participants; development and distribution of a water efficiency blog and e-newsletter; coordination of twelve quarterly Los Angeles Weed Management Area meetings; and support for disadvantaged community outreach efforts. The list of endeavors undertaken by the watershed coordinators is exhaustive, paralleling the extensive list of objectives for the third coordination grant.

## **Key Findings**

Major outcomes from overall efforts supported by the CalFed Watershed Program include: widespread adoption of low-impact development/sustainable landscaping, development of a model for water augmentation/stormwater capture projects, increased organizational capacity for the Council for Watershed Health, and the establishment of a strong collaborative network of stakeholders in the San Gabriel watershed.

## **Organizational capacity & grant overlap**

The Council for Watershed Health received a preliminary grant to foster organizational capacity and “establish an ongoing relationship with the CalFed Watershed Program.” Demonstrated by the seven grants received by the organization, the Council for Watershed Health was highly successful in developing a lasting relationship with the Watershed Program, acquiring over \$3.3 million in grant funding from the CalFed program, as well as over \$4.5 million in additional matching funds from a number of state agencies for watershed improvement projects.

The two grants received in 2000, the *Los Angeles and San Gabriel Rivers Watershed Council Organizational Development* and the *Study of Augmenting Groundwater Supplied Through Capture of Urban Runoff*, were both foundational for the organization. One grant was specifically dedicated to developing the capacity of the organization, enabling the Council for Watershed Health to build technical capabilities, conduct outreach to stakeholders, establish partnerships with other organizations and agencies, and prepare proposals for additional grant support. As a direct result of the grant, the organization became increasingly recognized for its capabilities as a collaborator, organizer, information-sharing hub, and facilitator. The organization was able to augment its funding opportunities, both from local agencies and from other grant sources. The organizational capacity grant helped build the Council for Watershed Health from a small nonprofit barely scraping by to a research and information-sharing center. The influential role that the Council for Watershed Health developed in the watershed is evidenced by the strong insistence from informants of surrounding watersheds that our research team pursue this case. Other organizations in the region look proudly upon the work that was accomplished and how the Council for Watershed Health emerged as a leading organization in watershed management in the Los Angeles and San Gabriel Rivers Watersheds.

The groundwater augmentation project grant received in 2000 launched nearly a decade- long project from inception through implementation and monitoring. The preliminary grant focused on researching prototypes for stormwater capture and groundwater infiltration systems and monitoring impacts on water quality and quantity. Multiple pilot projects were monitored and results were used to inform a demonstration project supported in part by a 2007 CalFed grant, the Elmer Avenue Retrofit. Part of the multi-beneficial project included native plant landscaping for the neighborhood. Parallel to these efforts, the watershed coordinator hired for three consecutive coordination grants (2004-2014) hosted seminars for professionals on sustainable low-impact landscaping techniques and pursued multiple efforts for making native seeds and nurseries more accessible in the region. As a result of the many overlapping efforts and campaign to raise awareness and promote more sustainable landscaping, Los Angeles landscape architects collaborated with the watershed coordinator to create a plant palette of native plants to use for projects across the city. Multiple native plant nurseries have emerged to meet the demand for native and water efficient landscaping. The level of awareness of sustainable landscaping has

increased in the professional realm as a result of the workshops hosted by the Council for Watershed Health and research conducted that led to the Elmer Avenue project.

Several of the grants received by the Council for Watershed Health provided the financial resources needed to develop the resources of the organization and increase the overall capacity of their organization (i.e. Organizational Development grant (2000); watershed coordinator grants (2004-2007; 2008-2011; 2011-2014)). With more staff available, in part due to receiving three consecutive watershed coordinator grants, outreach and collaborative efforts increased, and the Council developed strong partnerships with other organizations and agencies. With the successful implementation of a large-scale augmentation project that was based on research and monitoring pursued by the organization, local stakeholders recognized the value of the organization's role in watershed management. As a rising leader in watershed management in the region, the Council for Watershed Health found its niche in professional development with the help of the CalFed Watershed Program.

### **Environmental justice considerations**

Maintenance can be particularly challenging with infrastructure projects as designating a responsible party with the financial and technical capacity to manage the task is necessary. While essential, designating a responsible party is at times neglected. The Elmer Avenue site exemplifies environmental justice challenges that arise when an infrastructure project is implemented in a low-income area with maintenance responsibilities bestowed to the community. The Council for Watershed Health and TreePeople addressed some of the challenges by providing technical capacity training. However, in thinking through longer-term solutions, inevitable repairs, and potential community member turn-over, is technical training sufficient? Who is, or should be, responsible for bioswale repairs?

### **Structure of watershed coordination**

The Council for Watershed Health initially applied for the coordination grant funding in order to have a staff person to lead the low-impact development/sustainable landscaping efforts. One watershed coordinator fulfilled this role for three consecutive grant cycles. During the third grant cycle, the organization brought on a second part-time coordinator to provide a supporting role in watershed activities, in effect expanding efforts in more general ways. The watershed coordination program for the Council for Watershed Health was executed by two distinct approaches with two very different roles determined by the organization: 1) a watershed coordinator as a leader with a project focused orientation; 2) a watershed coordinator in a supporting role without a particular project focus. The watershed coordinator in a leadership role hosted the low impact development/sustainable landscaping seminars. Direct and indirect measurable outcomes include the number of participants, number of workshops, the development

and city-wide adoption of a native plant palette, and the adoption of legal ordinances for development. The second watershed coordinator acted in a supportive capacity, rather than in a leadership role, attending meetings throughout the watershed and sharing information among stakeholders. The focus of this second coordinator position was challenging as there was not one specific project task as addressed by a key informant, “the focus of the position needs to be clearer, although, the tasks need to be flexible to achieve that focus.” Direct impacts of the second watershed coordinator are not as easily measured nor discussed in detail in the watershed coordination grant reports.

The position of watershed coordinator was defined by the organization in a manner to address the organizational needs. While the roles were distinct, stakeholders recognized the value of the watershed coordination program in raising overall awareness of the watershed and its health and a better understanding of human impacts on the watershed, especially in landscaping decisions. The value of the watershed coordinator was not lost with the unique responsibilities each coordinator was tasked with, as one respondent stated, “However the position is defined, it is worthwhile and useful and appreciated.”

## **Appendix A. Methods**

Two researchers spent five days visiting stakeholders and touring watershed project sites in the Ventura River Watershed, the Santa Ana River Watershed, the Los Angeles River Watershed, and the San Gabriel River Watershed for grants received by the Ojai Valley Land Conservancy, Earth Resource Foundation, the River Project, the Los Angeles Department of Water and Power and Council for Watershed Health. Three in-person and five phone interviews were conducted for the grants received by the Council for Watershed Health with a diverse group of stakeholders, including numerous former staff and board members of the Council for Watershed Health, academia, and the Santa Ana Watershed Project Authority. All available documents were reviewed.

## Appendix B. Available Grant Documents

Council for Watershed Health	Individual Grant Proposal	Catalogued Description	Annual Update(s)	Individual Final Report	Catalogued Final Reports	Other	
2004-2007 (Coordination Grant)					x		
2008-2012 (Coordination Grant)				x	x		
2011-2014 (Coordination Grant)				x			
2000-2001 (Project Grant) Los Angeles and San Gabriel Rivers Watershed Council Organizational Development		x		x			
2000-2001 (Project Grant) Study of Augmenting Groundwater Supplies Through Capture of Urban Runoff		x		x		x	Project Report & Project Summary
2007 (Project Grant) Ecosystem Values of Watersheds in Southern California						x	Arroyo Seco Report Card
2007 (Project Grant) Sun Valley Neighborhood Retrofit Demonstration						x	Project Report & Publication

## References

[http://www.waterboards.ca.gov/losangeles/water\\_issues/programs/regional\\_program/Water\\_Quality\\_and\\_Watersheds/san\\_gabriel\\_river\\_watershed/summary.shtml](http://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/Water_Quality_and_Watersheds/san_gabriel_river_watershed/summary.shtml)

[http://www.waterboards.ca.gov/losangeles/water\\_issues/programs/regional\\_program/Water\\_Quality\\_and\\_Watersheds/los\\_angeles\\_river\\_watershed/la\\_summary.shtml](http://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/Water_Quality_and_Watersheds/los_angeles_river_watershed/la_summary.shtml)