

# Chapter 6 STUDIES AND PROGRAMS

## 6.1 Introduction

Action without study is fatal. Study without action is futile.

—Mary Ritter Beard

During the development of the plan, certain gaps in information and data were identified. Stakeholders proposed several key studies that could be undertaken to develop a stronger knowledge base about watershed issues. Better information can help the community to make more informed decisions and take appropriate actions. A range of monitoring and educational programs were also proposed that could expand awareness, strengthen collaboration and partnerships, and create opportunities to engage residents in becoming active stewards of the watershed.

## 6.2 Studies

Research is to see what everybody else has seen, and to think what nobody else has thought.

—Albert Szent-Gyorgyi

### ■ **Conceptual Model for an Integrated Approach to Water Quality City of Los Angeles LARWQCB** **\$100K–\$500K**

In order to help the community understand the linkage between functioning ecosystems and water quality, develop a quantitative numeric model to forecast the water quality benefits of pervious surfaces and functional streams. That model needs to help quantify load reductions attained by the full range of alternatives, not just sand filters, and infiltration trenches. It needs to tell people “if you capture and infiltrate X acre-feet of water, you will get Y pounds of credit towards the load allocation; if you make X acres of land pervious, you will get Y pounds per year credit; if you restore X miles of stream to natural condition, you will get Y pounds per year of credit.” The model would be tested through pilot projects and monitoring. This could be done as a special study through the City of Los Angeles’ CREST effort, in partnership with watershed stakeholders. The objective would be to work with the RWQCB to enable increasing pervious surfaces and restoring fluvial processes as valid TMDL implementation strategies.

### ■ **Framework for Water Quality Monitoring Program Initiative City & County of Los Angeles, LARWQCB** **\$100K–\$500K**

A key component to the development of a comprehensive water quality monitoring program is having sufficient base information. This becomes important in site selection for potential monitoring sites. A complete survey of the storm drain outlets (with metadata) is needed along the armored portion of the main stems and their associated open channel tributaries. Attribute information needed for those outlets include location, ID, diameter/length, shape, subwatershed ID, accessibility, etc. Other support data that would need to be collected include entry locations (gates) that lead into the channel and access availability (key required, permitting, etc). Once this is completed, the outlet information could then be analyzed with other relevant data (land use, storm drains, existing water quality data, and subwatershed boundaries) to determine potential wet and dry weather sampling sites and what constituents should be tested at each site. The project could go even further and analyze potential “home base” meeting locations that are centrally

located for future sampling events. Furthermore, they could develop directions from the base location to each sampling site and directions between adjacent sampling sites upstream and downstream from each other.

■ **Groundwater System Improvement Study (Includes the following two studies)**  
LADWP **\$20M**

■ **San Fernando Groundwater Basin Management Plan**  
LADWP **\$10M–\$50M**

Conduct a comprehensive groundwater study for the San Fernando Basin (SFB). Develop recommendations for implementing programs and/or projects that will maximize the use of its groundwater supply. Provide an independent study to identify, characterize and evaluate emerging water quality constituents; Provide an independent expert evaluation of the LADWP's existing groundwater facilities and its current operational strategies; Research and evaluate the need for the installation of new monitoring wells and provide geotechnical and engineering services for the installation of the proposed monitoring wells; Develop a short-term research monitoring program and monitor; Provide independent expert recommendations to assist in planning for short-term and long-term capital improvement projects to maximize the use of the SFB groundwater supply.

■ **Water Reuse Feasibility Study**  
LADWP **\$1.2M**

LADWP to obtain consultant support to facilitate an 18-month water reuse feasibility planning process, as an extension of the Water/Wastewater Integrated Resources Planning process. The goal is to conduct a balanced, comprehensive, and science-based feasibility study of all water reuse opportunities in the City, including groundwater replenishment with advanced treated recycled water from the Tillman Plant. The study will require widespread and active participation of key stakeholders such as neighborhood councils, community groups, environmental groups, business, and elected officials. The stakeholder workshops are scheduled to begin in the fall of 2008.

■ **Tujunga Wash Industrial Facilities Analysis**  
Sun Valley Neighborhood Council **<\$100K**

Develop study to determine impacts of industrial facilities on the water supply and recommend appropriate actions, BMPs, and education program for businesses. In the Sun Valley Neighborhood Council in the City of Los Angeles, there exist large zones of industrial metal plating yards and other industry adjacent to Tujunga Wash, Hansen Spreading Grounds, and the Sheldon Gravel Pit. There is little data identifying specific sources of these pollutants or site-specific BMPs for mitigation. Deliverables include monitoring data, guidelines to recommend appropriate actions, BMPs and an education program for industrial facilities.

■ **Tujunga Watershed School Retrofit Analysis**  
TreePeople **\$100K–\$500K**

Project will analyze the costs, benefits, and institutional barriers to retrofitting school campuses within the watershed. There are 76 schools in the Tujunga/Pacoima Watershed, comprising 978 acres of land that can be retrofitted to both capture water and minimize water use. cursory analysis shows significant impervious surfaces on school grounds in the watershed as well as opportunities to utilize recreation areas and school frontages as areas of infiltration. Elements for school retrofits proposed include tree plantings, swale/trail networks, outdoor classroom and/or amphitheater to double as retention basins, and the planting of drought

tolerant California Natives. Significant water can be captured by retrofitting existing recreation fields to function as stormwater detention basins and cisterns have proven to be useful in capturing storm flows for infiltration and irrigation purposes. A simple increase in permeable paving will increase infiltration as well as provide BMPs for Metals and Trash. School property provides the opportunity to work on large pieces of the watershed with an educational component. It encourages students to be stewards of their environment. Deliverables include identification of institutional barriers and recommendations for change, priority designation of schools for retrofit, specification of BMPs, and definition of costs and potential funding sources.

■ **Paths & Trails Analysis**

**Mission Hills Community College and Los Angeles Valley College**

**<\$100K**

Develop a comprehensive trails database and map for the Angeles National Forest (ANF). Currently, there is no freely available data documenting trail locations (major or minor) and trail characteristics. Using elevation/slope data, habitat sightings information, students can put together a practical guide for hiking in the forest, including information on hiking difficulty, length of time to hike a particular trail, and animal sightings.

■ **Historic Vegetation/Habitat Analysis**

**Los Angeles & San Gabriel Rivers Watershed Council**

**\$100K to \$500K**

Using information about existing California vegetation, historic topographic and soil maps, Spanish land grant maps, published reports, unpublished data, historic narratives, and other sources, identify and map the broader native plant communities, resultant habitat, and associated wildlife likely to have existed in the lower Tujunga/Pacoima Watershed prior to their eradication/extirpation/reduction in abundance. Speculation should be done with restoration opportunities and species of concern in mind.

■ **Riparian Habitat Hydroperiod Analysis**

**Los Angeles & San Gabriel Rivers Watershed Council**

**\$100K - 500K**

Identify an area that has recently (<10 years) burned and acquire historical aerial photographs of that area. Use the aerial photographs combined with field survey ground-truthing methods to track the habitat successional development along the riparian corridor within the burn area. Conduct an analysis of precipitation, stream flows, and stream water elevations during the same period to determine the hydroperiod response during the post recovery. Conduct analyses to correlate riparian habitat and hydroperiod to establish a relationship between riparian habitat (vegetation) type and hydroperiod.

■ **Climate Database**

**Los Angeles & San Gabriel Rivers Watershed Council**

**<\$100K**

NOAA and the County of Los Angeles Department of Public Works currently have endless amounts of climate data that isn't necessarily GIS-ready nor is it easily accessible. This information has been collected over different time periods and within different timeframes (hourly, daily, monthly, annually) depending on the site. In addition, depending on the type of information being collected, NOAA may or may not charge a fee. Using the climate station list generated through the development of this plan, create a climate database that links the spatial component (station locations) to the associated tabular information (precipitation, cloud cover, ET, etc.). Once the DB is assembled, characteristics such as precipitation can be interpolated between stations into a GRID for the entire watershed using the NRCS PRISM model (interpolation based on elevation/terrain).

### 6.3 Programs

In the end we retain from our studies only that which we practically apply.

—Johann Wolfgang Von Goethe

#### ■ **Watershed U—Tujunga TRP**

**<\$100K**

Continue the successful Watershed U-Tujunga training program for the Tujunga/Pacoima Watershed on an annual basis. Watershed U is designed to increase awareness of, and communication among watershed stakeholders, and to engage local decision makers in the process of restoring watershed function. The program builds watershed awareness, increases stakeholder capacity and cooperation, and builds partnerships for project development, implementation, and stewardship.

#### ■ **Tujunga/Pacoima Urban Water Sampling Program City & County of Los Angeles, LARWQCB**

**\$100K to \$1M**

The proposed water quality monitoring program has two components: Baseline and Ongoing Sampling. There are three objectives to the Baseline sampling program: 1) to generate an understanding of water quality in the lower Tujunga/Pacoima watershed, 2) to identify and confirm key sources of nonpoint pollution in the lower watershed; and 3) to identify wet vs. dry season trends. This would be completed at a number of locations throughout the watershed. The objective of the Ongoing sampling program is to assess changes in water quality due to implementation of TMDLs and other projects in the watershed. The program should be undertaken annually after the baseline period. The TMDLS currently in place are based off of no real data from this watershed, so it is imperative that real source data be developed. The initial Baseline report would identify sources of nonpoint pollution and robust water quality data for the watershed. The Ongoing program would produce an annual report to stakeholders.

#### ■ **Tujunga/Pacoima Watershed Guide for Neighborhood Councils TRP**

**<\$100K**

Program to develop and disseminate a handbook for City of Los Angeles Neighborhood Councils that can develop local community capacity to work productively with the City and the development community in creating watershed-friendly land use practices and design features.

#### ■ **Parking Lot Retrofit Guidelines Panorama City Neighborhood Council**

**<\$100K**

Program to mandate medians/tree wells in parking lots with native plantings and permeable gutters within the Panorama City NC area through an amendment to the community plan. There is continual construction in the Panorama City NC and an opportunity to benefit the watershed and environment through developing guidelines for parking lot retrofits and all new construction. The objective would be to incorporate the new guidelines into the local community plan.

#### ■ **Equestrian BMPs in the Tujunga/Pacoima Watershed Sunland-Tujunga Neighborhood Council**

**<\$100K**

Program to work with property owners through education or enforcement to implement BMPs for equestrian facilities and “backyard livestock.” Project aims to decrease and/or manage fecal coliform in the watershed. Addresses water quality improvements through collaboration between the Neighborhood Council & local residents. Deliverables include cooperative BMP implementation in at least 6 sites.

■ **Education for Conservation in Tujunga/Pacoima Watershed TRP** **<\$100K**

Produce and distribute a watershed-specific brochure to educate watershed residents, Neighborhood Councils and businesses about ways to conserve water: ET meters and weather sensors, native landscaping, residential landform grading, dry wells, pervious surfaces, cisterns, graywater systems, and other measures.

■ **Environmental Education Camps on Angeles National Forest U.S. Forest Service, LAUSD** **\$500K–\$1M**

Replace poorly-operated and existing organization camps on ANF with upgraded residential camp facilities for school-system-run environmental education. No limits on ideas - water treatment on site as educational tool, study of native habitat. Site could be used as a base for field trips to local water facilities and lessons about their function and their effects on watershed.

■ **Big Tujunga Dam Operation and Maintenance Plan U.S. Forest Service, U.S. Army Corps of Engineers, LACDPW** **Cost TBD**

Refine and adopt a revised Operation and Maintenance Plan for the dam and other facilities within the Big Tujunga Reservoir. Addresses local water resources, water quality, hydrologic function & watershed-based planning and projects.

