

## **CHAPTER 1: INTRODUCTION**

### **1.0 Introduction and purpose**

The San Lorenzo Valley Water District (District) is the primary water supplier to approximately 7,400 connections (22,500 people) within the unincorporated area of San Lorenzo Valley in the Santa Cruz Mountains, on the central coast of California.

The District's surface water and groundwater supplies originate entirely within the San Lorenzo River watershed area of approximately 138 square miles, as depicted in Figure 1-1. The District has a substantial stake in protecting and enhancing the health of the San Lorenzo River watershed, as reflected in the District's mission statement, adopted by the Board in June, 2000:

Our mission is to provide our customers and all future generations with reliable, safe and high quality water at an equitable price; to create and maintain outstanding customer service; to manage and protect the environmental health of the aquifers and watersheds; and, to ensure the fiscal vitality of the San Lorenzo Valley Water District.

The District has worked cooperatively with its community and other public agencies in pursuing its mission.

The purpose of this document is to provide information to assist the District in enhancing and protecting water quality, throughout the watershed, but especially within watershed lands owned by the District, and within the District's service area where the District exercises the most control. The document is intended as a reference to be used by District directors, staff, the public, contractors, educators, scientists, and other agencies.

### **1.1. Background**

After the State Legislature declared the San Lorenzo River part of the State Protected Waterways Program in 1976, local residents advocated for public protection of the natural, social and economic values of the San Lorenzo River watershed. In response, the County of Santa Cruz and the State Department of Fish and Game, with input from local citizens, produced the first San Lorenzo River Watershed Management Plan, in 1979 (County of Santa Cruz, 1979). The agencies issued a draft update to this plan in 2001 (County of Santa Cruz, 2001).

In 1985, the District's Board of Directors adopted the District's first Watershed Protection Plan (San Lorenzo Valley Water District, 1985).

In 2005, the District Board of Directors directed staff to prepare a new management plan to reassess the District's management goals and policies, so that they to reflect changes that have occurred since 1985 in the following areas:

- District land ownership and service area
- Watershed conditions
- Advances in scientific research in watershed science and ecosystem management
- New federal and state regulatory requirements

Since 1985, the District has bought and sold watershed lands, has annexed territory into its service area, and has endured major natural disturbances.

Since 1985, some improvements in river water quality have been made, but development in the watershed has increased, and ground water aquifers have dropped. Invasive exotic species continue to present a problem for land managers.

Since 1985, research in forest ecology, watershed science and aquatic biology has produced new models of ecosystem management and adaptive management. Local studies have provided new information about watershed conditions in the San Lorenzo River watershed, in terms of water quality, water supply, fisheries habitat, and groundwater aquifers.

Since 1985, new Federal and state programs and standards under the Safe Drinking Water Act (Safe Drinking Water Act Amendments, 1996) and the Surface Water Treatment Rule (SWTR, 1998) have increased drinking water standards, and placed new emphasis on source water protection.

Since 1985, two key salmonid species have been federally listed under the Endangered Species Act. Steelhead are listed as threatened, and coho salmon are listed as endangered. Recovery of these species is mandated by the Endangered Species Act (NMFS, 2005).

Since 1985, the San Lorenzo River and tributaries have been listed by the Central Coast Regional Water Quality Control Board as an impaired waterway due to sediment, nutrients and pathogens affecting drinking water, fisheries, and recreational beneficial uses under section 303(d) of the federal Clean Water Act. The State and Regional Water Quality Control Boards and the EPA adopted a Total Maximum Daily Load (TMDL) for sediment in for the San Lorenzo River and its tributaries (CCRWQCB, 2002). The TMDL is required to include a source analysis, numeric targets, linkage analysis, TMDLs, load allocations, an implementation plan, and a monitoring plan. The sediment TMDL and the nitrate TMDL were approved by the Office of Administrative Law in 2003. The pathogen TMDL is scheduled for consideration in 2008.

## **1.2 The District's partnerships in watershed protection**

The District has a long history of working cooperatively with other agencies to protect the San Lorenzo River watershed. District staff was part of the Technical Advisory Committee to the 1979 San Lorenzo River Watershed Management Plan, which was written by the County. The District has actively participated in the 1996, 2001, and 2006 San Lorenzo River watershed sanitary surveys, coordinated by the City of Santa Cruz. The District has sponsored and co-sponsored salmonid studies of the San Lorenzo River since 1994, partnering at different times with the County, the City of Santa Cruz, and the Lompico County Water District. In addition, the District completed source water assessments for each of its water sources, as required by the State Department of Health Services, Drinking Water Program.

In 2003, the District established an Education Program Advisory Commission to advise the Board of Directors in awarding education program grants and scholarships. Since then, the District has budgeted up to \$17,500 per year to fund grants of up to \$2,500 for educational, restoration, and resource conservation projects, which enhance the understanding of the San Lorenzo River watershed or improve the watershed's environmental health. Some of the non-profit organizations that have been awarded grants include the Sandhills Alliance for Natural

Diversity, the Monterey Bay Master Gardeners, the Santa Cruz County Resource Conservation District, the Mount Hermon Outdoor Science School, as well as local public schools.

In 2008, the District initiated and co-sponsored a local climate change working group composed of other local public water agencies to address potential impacts and mitigations of climate change. In May 2008, this inter-agency group sponsored a public forum entitled, “Tools for Addressing Climate Change and Local Water Resources,” featuring presentations from acknowledged experts in water resources and climate change.

The District and California State Parks have partnered successfully in the past in watershed management. Until 2001, the District owned the 1,370 acre Waterman Gap property at the headwaters of the San Lorenzo River at the southern boundary of Castle Rock State Park. The two agencies worked out land use agreements and easements to provide for public access, recreation, and appropriate watershed management (California State Park and Recreation Commission, 2000). The District sold the Waterman Gap property to Sempervirens Fund in 2000, and the property has since become part of Castle Rock State Park.

The District has long recognized the value of stakeholder involvement in the watershed planning process. The planning process occurs both at regular Board meetings, and at the Board’s Environmental Committee meetings. All of these meetings are open to the public, and are noticed on the District’s website.

### **1.3 Scope of document**

The scope of this document is defined by its goals, and its geographic and temporal limits.

Geographically, the scope of the document includes the entire San Lorenzo River watershed, with an emphasis on the subwatersheds that supply the District’s water. The entire watershed is included for several reasons. First, the District is one of many water purveyors that depend on the watershed; the District works cooperatively to protect the watershed’s resources, including water quality and water supply, and fisheries. Second, because there is little existing survey data that address natural resources on District-owned lands, the District must draw from studies that address a larger watershed scale, as well as studies that focus on nearby subwatersheds. These studies may be used to extrapolate information to District-owned lands, while the District plans and prioritizes further studies on its own lands.

Temporally, the scope of this document is ten years. The US EPA (2005) advises that watershed studies be updated at least every ten years. During this period, watershed planners should make a reasonable effort to identify significant pollutant sources, specify the management measures that will most effectively address those sources, and broadly estimate the expected load reductions that will result.

On the other hand, US EPA (2005) recognizes that the information available during the planning stage may be limited. Therefore, preliminary information may need to be updated as it becomes available, and prescribed management measures may need to be assessed for their effectiveness more frequently. This principle of adaptive management ensures that management measures can proceed even though information in the watershed plan may be imperfect and require modification over time, as better information becomes available.

## 1.4 How to use this document

This document is divided into two parts:

- Part I: Existing Conditions Report
- Part II: District Goals, Objectives and Management Strategies

### Part I: Existing conditions

Part I provides the contextual background for management decisions, by describing current watershed conditions, tracing historic and current impacts, and describing efforts to address these impacts. Part I generally describes the San Lorenzo River watershed. It begins by providing a setting for the watershed in terms of the region's climate and geography. It examines the area's geology, soils, as well as its geomorphology and hydrology. Next, it describes the biotic resources of the watershed, and the ecosystem functions and natural services that these resources provide. It summarizes the area's fire ecology, and provides an overview of the watershed's historical, cultural, and recreational resources. Finally, Part I summarizes advances in scientific research in watershed science and ecosystem management, and discusses potential approaches of assessing the local impacts of climate change on the watershed's resources.

Climate change is expected to have various impacts on the existing conditions of the District's resources resulting from temperature increases and more extreme weather patterns at the local scale. Each chapter briefly introduces these potential impacts to watershed resources.

Part I draws heavily on research at the watershed scale, in part drawn from other local agency plans, which synthesize research. The report focuses, as much as possible, on the District's land ownership and the subwatersheds and aquifers that supply the District's water.



**The public and peer-review of Part I, the Administrative Draft of the Existing Conditions Report, identified information gaps which are flagged within the text of this document with the icon to the left. Policies are in place in Part II to prioritize filling these information gaps.**

### Part II: District goals, objectives, and management strategies

Part II affirms the District's approach of ecosystem management, defines goals, objectives and policies designed to assist the District in realizing its mission, prioritizes studies for filling the data gaps identified in Part I, and identifies indicators to measure the progress of management strategies. Part II is intended as a reference for the District directors and staff to design projects that meet the agency's management goals, and to measure the success of such projects in meeting those goals.

## **ACKNOWLEDGMENTS: CHAPTER 1**

The San Lorenzo Valley Water District thanks the following contributors and reviewers of Chapter 1:

### Contributors:

Betsy Herbert, Ph.D., Environmental Analyst, San Lorenzo Valley Water District

Rob Menzies, GIS Technician, San Lorenzo Valley Water District

### Reviewers:

Chris Berry, Water Resources Manager, City of Santa Cruz Water Department

Kevin Collins, President, Lompico Watershed Conservancy

Jodi McGraw, Ph.D., Population and Community Ecologist

Fred McPherson, Biologist, Educator; Board of Directors, San Lorenzo Valley Water District

Jim Mueller, District Manager, San Lorenzo Valley Water District

Jim Nelson, Board of Directors, San Lorenzo Valley Water District

Larry Prather, Board of Directors, San Lorenzo Valley Water District

Jim Rapoza, Board of Directors, San Lorenzo Valley Water District

John Ricker, Director, Water Resources Division, Santa Cruz County Environmental Health

Rick Rogers, Director of Operations, San Lorenzo Valley Water District

Rich Sampson, RPF; Unit Environmental Coordinator, CalFire

John T. Stanley, Restoration Ecologist, WWW Restoration

Terry Vierra, Board of Directors, San Lorenzo Valley Water District