

Section 1

Introduction

1.1 Overview

The City of Big Bear Lake Department of Water and Power (DWP) is organized and operated pursuant to the California Water Code. DWP is governed by a five-member Board of Commissioners (Board) that is appointed by the City of Big Bear Lake City Council. The DWP serves the area known as City of Big Bear Lake, and the communities of Fawnskin, Erwin Lake, Lake William, Rim Forest, Sugarloaf, and Moonridge in unincorporated San Bernardino County. Currently, the sole source of supply for the DWP in the Big Bear Valley is local groundwater.

As an urban water supplier providing municipal water to more than 3,000 customers, the DWP is required to comply with The Urban Water Management Planning Act (Act). The Act became effective on January 1, 1984 and requires that urban water suppliers prepare and adopt an urban water management plan, in accordance with prescribed requirements.

The Act was originally developed as a result of concerns for potential water supply shortages throughout the State. Therefore, it required information that focused primarily on water supply reliability and water use efficiency measures. Since its original passage in 1983, there have been several amendments added, the most recent adopted in 2004. Some of the recent amendments include: providing additional emphasis on drought contingency planning and recycled water, as well as incorporation of water quality issues and how they might affect water supply reliability.

With the passage of Senate Bills 610 and 221, in 2001, Urban Water Management Plans (UWMP) take on even more importance. SB 610 and 221 require that counties and cities consider the availability of adequate water supplies for certain new large developments. These statutes require written verification of sufficient water supply to serve the new development, and Urban Water Management Plans are identified as key source documents for this verification. Based on the history of development in the DWP service area, it is unlikely that either of the statutes established by the Senate bills will ever apply to the DWP.

The 2005 UWMP updates the 2000 UWMP and takes into account new Act requirements and changes in demographics. Like much of arid-west Southern California, DWP faces increasing water demands, limited water supplies, and water quality challenges.

1.1.1 History

The Big Bear Valley was settled in the 1860’s following the discovery of gold in the area. In 1884, Big Bear Lake was formed with the construction of a dam to provide irrigation waters to the San Bernardino Valley. By the 1920’s recreation was the most important economic factor in the valley. In 1977, the Big Bear Municipal Water District assumed control of the lake, altering its primary purpose from irrigation to water recreation. The City of Big Bear Lake was incorporated in 1980 and became a charter city in 1983. The City of Big Bear Lake Department of Water and Power was formed in 1989 with the purchase of the water system from Southern California Water Company.

1.1.2 Service Area Description

Land Use

The DWP’s service area encompasses approximately 5,970 acres, or 9.3 square miles located in the Big Bear Valley, and the Rim Forest Area located south of Lake Arrowhead (Figure 1-1). The service area is located in the San Bernardino Mountains in San Bernardino County. Land surface elevations range from 6,000 ft to 9,900 ft. The elevation of Big Bear Lake itself is 6,740 ft. The main service area is comprised of the Big Bear Lake / Moonridge system mostly located in the City of Big Bear Lake, and the Sugarloaf / Erwin Lake system located in San Bernardino County. There are also 3 smaller, isolated service areas, Fawnskin, and Lake William systems located in Big Bear Valley, and Rim Forest, all within unincorporated San Bernardino County. Single Family Residential occupies 85% of the acreage, commercial 12%, government and institutional 2.5%, and industrial 0.5%.

Demographics

Current demographics were obtained from a variety of sources, including the California Department of Finance, U.S. Census Bureau, and City and County planning documents. Table 1-1 presents these demographics in five year intervals beginning in 2005 and ending in 2025. The data is for the Big Bear Valley area which includes those areas served by the DWP.

Table 1-1					
Population – Current and Projected					
	2005	2010	2015	2020	2025
Big Bear Valley Population	19,905	23,075	26,750	31,000	35,950

Within DWP’s service area, population is expected to grow slowly over the next 20 years. The estimated rate of population growth ranges from 1.0% to 3.0% per year, based on growth since 2000. The average annual rate of population growth during the 1990’s was 0.7% per year; growth has increased since 2000. The US Census Bureau estimated a growth rate of 3.0% for the City of Big Bear Lake, which is anticipated to be higher than that of the rest of Big Bear Valley. However, apparently due to the large number of part time homeowners and the recreational character of the area, there is probably no population estimate that could be described as definitive. For purposes of this UWMP, a conservative average annual population growth rate of 3.0% per year was assumed.

The DWP service area is primarily a mountain / resort community. Therefore, the population consists of a mixture of full-time and part-time residents, vacationers, and short-term visitors. The City of Big Bear Lake Chamber of Commerce estimates that the population of the Big Bear Valley can peak at 80,000 to 100,000 people on weekends and holidays, year round. The Census Bureau estimates that 75% of the homes in the DWP service area are what is considered “vacant,” which means that they are either vacation homes or second homes, and that 25% of the homes are occupied full time. DWP records suggest that approximately 1/3 of its customers are full time residents.

Climate

The tables below (Table 1-2, 1-3) summarize the standard monthly ETO in the Big Bear Valley, along with average rainfall and average temperature, on a monthly basis.

Table 1-2 ETO, Average Rainfall, Average Temperature by Month						
	Jan	Feb	Mar	Apr	May	June
Standard Monthly ETo	2.08	1.95	3.96	4.62	6.30	7.01
Average Rainfall (inches)	4.04	4.11	3.29	1.32	0.51	0.13
Average Temperature (F)	34	35	38	43	51	58

Table 1-3 ETO, Average Rainfall, Average Temperature by Month							
	July	Aug	Sept	Oct	Nov	Dec	Annual
Standard Monthly ETo	6.77	5.72	5.28	3.76	2.19	1.92	51.56
Average Rainfall (inches)	0.71	1.05	0.55	0.80	2.17	2.97	21.65
Average Temperature (F)	64	63	57	49	40	34	47

(above information from Bill LaHaye, DWP)

1.2 Water Master Plan

To help achieve its desire to have adequate water supplies for the future, the DWP is in the process of completing a Water Master Plan (WMP). The purpose of the WMP is to develop a long-range water supply and capital improvement plan to reliably meet the needs of the DWP service area for the future.

The WMP is an assessment of current and ultimate water demands, evaluation of available groundwater supply sources to meet projected demands, and an evaluation of the distribution system to convey the source water through the service area. As a part of the assessment of the distribution system, a hydraulic model is being developed and calibrated to estimate the needed capacities of pipelines, storage facilities, and pumping units. In addition, the WMP includes a financial plan and rate study, which will allow the DWP to determine the proper rate structure needed to meet the financial goals and capital improvements outlined in the WMP.

1.3 Agency Coordination

The DWP shares the Big Bear Valley with one other water supplier, the Big Bear City Community Services District (BCCSD), which serves unincorporated Big Bear City and a portion of Erwin Lake. DWP also receives wholesale water from the Crestline Lake Arrowhead Water Agency for delivery to the Rim Forest portion of the service area. Other water management agencies the DWP must coordinate with include the Big Bear Lake Municipal Water District (BBLMWD) which manages Big Bear Lake, Big Bear Area Regional Wastewater Agency (BBARWA) which provides wastewater management for the Big Bear Valley, and San Bernardino County, County Service Area 53B (CSA 53B), who provides wastewater service to the Fawnskin area.

Table 1-4 Agency Coordination							
	Participated in UWMP development	Comment on the draft	Attended Public meetings	Contacted for assistance	Received copy of the draft	Sent notice of intention to adopt	Not Involved / No Info
<i>Other water suppliers:</i>							
CLAWA			X	X	X	X	
BCCSD			X	X	X	X	
<i>Water Management Agencies:</i>							
BBLMWD				X			
BBARWA		X	X	X	X	X	
CSA 53B (Fawnskin sewer)					X	X	
<i>Relevant Public Agencies:</i>							
City of Big Bear Lake	X	X	X	X	X	X	
County of San Bernardino	X		X	X	X	X	