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Draft Final Report

Assessment of Market Conditions for Outdoor Recreation Facilities and Services at Lake Berryessa

Napa County, California

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U.S. Department of the Interior
Bureau of Reclamation
Napa, California

May 2014

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Assessment of Market Conditions for Outdoor Recreation Facilities and Services

Draft Final Report

Prepared by

United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Central California Area Office

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Napa, California

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Executive Summary

ES.1 Introduction

Lake Berryessa is part of a federally-owned water project owned by the Department of the Interior Bureau of Reclamation (Reclamation). The reservoir is in Napa County, which is 70 miles northeast of San Francisco, 65 miles west of Sacramento, and approximately 20 miles from the center of Napa Valley's wine country.

In the spring of 2013, Reclamation began planning for the future long-term management of the concession areas by commercial businesses as called for in the 2005 Visitor Services Plan (VSP) and 2006 Record of Decision (ROD), with the goal of providing a diverse range of sustainable, short-term recreation opportunities for the public in the seven concession areas. To achieve a successful solicitation and economically sound business ventures, these recreation services will be designed using a combined approach consisting of a comprehensive market assessment, conceptual site planning and financial feasibility evaluation along with infrastructure design and environmental analyses.

ES.2 Purpose and Need

The purpose of this Market Assessment is to evaluate the potential market conditions to determine the feasibility of providing new public use facilities and services at five separate and distinct recreation areas at Lake Berryessa (Steele Canyon, Spanish Flat, Berryessa Point, Monticello Shores, and Putah Canyon). There is a need to determine the number of concessions necessary to meet public needs, types of facilities and services to be provided, financial feasibility of the concession(s), appropriate location(s) for commercial activities, and the appropriate quantity of facilities and services that will offer diverse recreation opportunities to the public (Reclamation, 2002).

ES.3 Methodology for Preparation of the Market Assessment

A database (i.e., quantitative) and non-database approach (i.e., qualitative) methodology was used to prepare this Market Assessment.

Qualitative assessment is the non-database methodology that relies on interviews, expert opinion, archival records, existing information and observations. Professional judgment is considered useful for long-term estimations where there are many factors that may influence future actions. Quantitative assessment (i.e., collecting and analyzing data/information) is the database methodology that was used. This methodology consists of collecting and analyzing a sufficient amount of recreation demand, trend, demographic, and population information. The information is used to estimate what types of facilities and services would be provided in the future to accommodate a particular type of activity and user. The recommended facilities and services are those that could satisfy future demand predictions and potentially allow a concessionaire an opportunity to make a reasonable profit.

ES.4 Project Limitations

There are several factors that will likely affect the level of accuracy and precision of the recommendations regarding the types, quantities and locations of new facilities and services at Lake Berryessa. Following are the main factors:

- The Market Assessment is based upon an analysis of existing information and data available from Reclamation, campground and marina operators, county and state plans and websites, and other readily available public documents.

- There was no original data collection completed using community or market area surveys, focus groups, interviews, or other traditional public input/measurement tools.

- Historical Lake Berryessa recreation visitation data and reports showing past user satisfaction levels, trends, seasonal use patterns, or profiles of visitors are minimal.

- The major transformation over the past 10 years at Lake Berryessa in the type, amount, availability of traditional recreation opportunities, and the cessation of several marinas disrupts the ability to forecast the future demand and preference for certain facilities and services.

ES.5 Guidance Documents Affecting Lake Berryessa Recreation and Commercial Services Management

Recreation and land management activities at Lake Berryessa are governed by a variety of laws, internal policies, directives and standards, planning and guidance documents, and studies. As much as possible, this Market Assessment must be consistent with the following:

- Solano Project Authorization and Public Law 93-493.

- 1959 Public Use Plan.
- 1992 Reservoir Area Management Plan for Lake Berryessa and 1993 Record of Decision.
- 2005 Visitor Services Plan and 2006 Record of Decision.
- Reclamation Directives and Standard, and Guidelines.

ES.6 Recreation Demand

The majority of people that visit Lake Berryessa reside in the San Francisco and Sacramento areas. About 75 percent of the historical visitors to the lake were from the San Francisco Bay Area and approximately 20 percent were from the Sacramento area (Fletcher et al, 1997). The market area for this Market Assessment encompasses an area within a100-mile radius of Lake Berryessa. The market area includes the 9 counties that make up the Bay Area (i.e., Santa Clara, Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Solano, and Sonoma) and an additional16 representative counties that are within the market area and a reasonable driving distance from the lake (i.e., Amador, Butte, Calaveras, Colusa, El Dorado, Glenn, Lake, Mendocino, Nevada, Placer, Sacramento, San Joaquin, Stanislaus, Sutter, Yolo, and Yuba). To understand what future facilities and services are appropriate and necessary at Lake Berryessa, it is necessary to collect an appropriate level of data and information about the recreation environment from within market area as well as outside the market area (e.g., national and the rest of the State of California).

> Recreation demand is the estimated number of people who are projected to participate in a particular recreation opportunity at some predetermined future time and location (Haas, et al, 2007).

ES.7 Qualitative Considerations

Recreation-related trends can influence future demand for creation of new or different types of public outdoor recreation opportunities. A lack of understanding of current and anticipated water-related recreation use trends can hamper the ability to effectively manage recreation. Following are examples of key trends related to participation levels that could influence future water recreation management and demand.

ES.7.1 Urban Recreation Activities

As society becomes more urbanized, travel patterns (including length of stay, repeat visitation, and distance traveled) will be increasingly dependent on the quality of the recreation opportunities and the recreation settings provided (Tarrant, et al, 1999). Urban residents typically have fewer outdoor recreation opportunities than rural residents, which results in increased demand for outdoor recreation opportunities and activities closer to urban areas.

Recreation Market Trends

Markets for outdoor activities are changing as new forms of participation are discovered, as the backgrounds, perspectives, and tastes of recreationists change, and as constraints and opportunities shift. In that these changes are in part determined by the opportunities that are available, public land management policies will be under increased scrutiny to determine how well they meet the needs of Americans across all social strata, while at the same time providing private section business opportunities (Cordell et al, 1999).

Recreation Activity Trends

Recreation use patterns continue to evolve. Basic recreation activities are generally constant, but trends occur within the activity. In boating, there are two trends where large craft are increasing faster than small craft, and participation in non-motorized boating is increasing at a faster rate than motorized. Other trends involve the provision of high-end camping, recreation-oriented urban redevelopment and development centers, and increased interest in rural communities (Delta Protection Commission, 2012).

Water-Based Recreation Activities

Projections for many water-based activities, such as visiting beaches or water areas, canoeing, motorboating, non-pool swimming, and rafting, show increases over projected population growth through the year 2050 (Bowker, et al. 1999).

Water-Based Facilities

A proliferation since 1990 of personal watercraft, and strong growth in numbers of larger trailer-based boats and cruising boats, are stressing the capacity of some waterways and boating facilities (California Department of Boating and Waterways, 2002).

Non-consumptive Wildlife Activities

Non-consumptive wildlife activities, such as birdwatching, photography, and other types of wildlife viewing, are projected to increase more than the population growth through the year 2050. The largest factor contributing to the projected increase is likely the increasing age of the general population. However, participation in wildlife-watching from 2006 to 2011 decreased slightly by 1 percent (U.S. Fish and Wildlife Service, 2011). Again, this short-term trend cannot be considered significant.

ES.7.2 Demographic Factors

Recreation research shows that demographic factors, such as age, race or ethnicity, gender, wealth or income, education, and previous experience, influence recreation behavior. The largest change expected in factors influencing recreation behavior relates to increases in population and real income. Population, age, and gender ratio are expected to change relatively little, whereas the percentage of whites in the population should decline as other racial groups grow at faster rates (Hof et al, 1983).

ES.8 Quantitative Assessment

It is necessary to document and understand how existing and projected recreation-related participation trends, demographics, and population can influence future demand. A lack of understanding of these factors can limit one's ability to market and manage recreation, associated programs, and resources effectively. Since a majority of the visitors to Lake Berryessa reside in the local area, emphasis is given to the demographic and population data for the 25 counties within the market area. It is also important to understand how visitors in the market area feel about the facilities and services at Lake Berryessa, their reasons why they may or may not visit, as well has how the projected population visitor base and income level of market area residents can support recreation developments**.**

ES.8.1 National Recreation Participation Levels, Demographics, and Population

Camping is one of the most popular outdoor recreation activities in the United States. Camping can occur in a variety of settings from developed Recreation Vehicle (RV) campsites with full hooks, to undeveloped hike-in and boat-in sites, to back country wilderness areas. Camping participants averaged 14 camping days per year for a total of 592 million days. Over three quarters of camping participants participate in multiple outdoor activities (Outdoor Foundation®, 2013). For this reason camping can be considered a gateway to the outdoors.

The fastest growing outdoor recreation activities by the percent change in participation from 1999 to 2009 were kayaking (103.8%), waterskiing (33.1%), viewing wildflowers/trees (29.4%), viewing and photographing wildlife other than birds (25.4%), viewing and photographing birds (22.8%), visiting a beach (20.7%), canoeing (18.2%), viewing natural scenery (17.9%), warm water fishing (17.1 %), and day hiking (15.4%).

According to the U.S. Census Bureau, the estimated 2012 population of the United States was 313,914,040, up 1.7 percent from a population of 308,745,538 in 2010. The racial makeup of the population in 2012 consisted of Whites or European Americans (78.1%), Hispanic (16.7%), Black or African American (13.1%), Asian (5.0%), and others (3.7%). The Hispanic population is the fastest growing racial group in the United States. Most reports predict that the Hispanic population will make up to approximately 30 percent of the total population of the United States in 2050.

The population of the United States is projected to be 333,896,000 in 2020; 358,471,000 in 2030; 380,016,000 in 2040; and 399,803,000 in 2050; it is expected to surpass 401 million by the end of 2050 (U.S. Census, 2010).

ES.9 California Recreation Participation Levels, Demographics and Population

The top 10 California recreation activities by participation are walking for fitness or pleasure (74.2%), driving for pleasure, sightseeing, diving through natural scenery (59.9%), beach activities (59.2%), swimming in a pool (50.9%), day hiking on trails (46.9%), wildlife viewing, bird watching, viewing natural scenery (45.9%), jogging and running for exercise (39.8%), bicycling on paved surfaces (36.3%), outdoor photography (33.3%), and using open turf areas (33.3%).

According to the U.S. Census Bureau, the estimated 2012 population of California was 38,041,956 which was an increase of 2.1 percent from a population of 37,253,956 in April 2010. This increase was slightly higher than the national average increase of 1.7 percent. The racial makeup of California's population in 2012 was White alone (73.7%), Hispanic or Latino (38.2%), Asian alone (13.9%), two or more races (3.6%), Black or African American alone (6.6%), American Indian and Alaska Native alone (1.7%), and Native Hawaiian and other Pacific Islander alone (0.5%)(U.S. Census Bureau, 2010).

For 2012, the San Francisco Bay Area was the fastest growing region in the state and includes four of the five fastest growing counties. Santa Clara County is the fastest growing county in the state (1.6%), while Alameda, San Mateo, and San Francisco County all had population growth rates over one percent (California Department of Finance, 2013).

ES.9.1 Local Recreation Participation Levels, Demographics, and Population

The recreation participation levels for the local area is presented in the form of preferred recreation activities, preferred type of camping, preferred characteristics, and preferred site attributes for Lake Berryessa that were identified in a 1997 Chico State University Market Survey. For the purposes of this report, it is assumed that participation rates for the remainder of the market area mirrors current California levels.

For the individuals who had participated in certain outdoor recreation activities at Lake Berryessa in the previous 12 months and who would participate in a particular activity in the next two years, would do so at the following percentage rates: boat when camping (56.8%), off-road – motorized (54.5%), horseback riding (45%), fishing (44.4%), swimming – not home pool (44.2%), camping (42.6%), tennis/golf/volleyball (38.8%), boating – non fish (38.3%), hiking/backpacking (38.1%), mountain/road biking (37.3%), picnicking (37%), beach activities (35.6%), and nature activities (34.4%).

Respondents rated the importance of the several campsite characteristics. The most important characteristics are near water (52%), near restrooms (44.3%), flush toilets (38.5%), waste dump stations (33.9%), hot showers (33.2%), and full hookups (33.3%).

For the purposes of the local and demographic and population section, the local area consists of the 25 selected counties within the market area. Special emphasis is given to the Bay Area counties and the visitor profile of tourists that visit Napa Valley. It is important to understand the significance of the demographic profile of the residents within the market area as well as the tourists that visit the Bay Area and Napa Valley specifically.

The average racial make-up of all the counties in the market area is: White (58.2%), Hispanic (24.9%), Black or African American (3.0%), American Indian and Alaska Native (2.3%), Asian (7.2%), Native Hawaii and other Pacific Islander (0.4%), and two or more races (3.9%)

The 5 fastest growing counties within the market area from 2010 to 2050 are Sutter (124%), San Joaquin (101%), Yuba (99%) and Colusa (71%), and Stanislaus (67%). The average population increase of all 25 counties together is 36% percent which is slightly higher than the projected population increase of 35 percent for the State of California for the same time period (California Department of Finance, 2013).

The median household income and the ethnicity of visitors to Napa Valley are significantly different when compared to the overall demographics of the residents of the counties within the market area, as well as the rest of California and the nation. Visitors to Napa Valley are more affluent than the average resident within the market area. Approximately half of all survey respondents had annual household incomes above $100,000 (Visit Napa County, 2012).

ES.10 Unmet Demand

To increase participation levels at Lake Berryessa and ensure the financial viability of new concession-operated developments, it is necessary to attract those individuals who are:

- Aware of Lake Berryessa but for some reason do not feel welcomed, comfortable, or are unable to visit (e.g., disabled visitors). These are the disenfranchised individuals.
- Planning to visit Lake Berryessa but who have not done so yet (latent visitors).
- Residents who have moved to the area and are not currently aware of the opportunities at Lake Berryessa but are likely to participate as they become more aware (new individuals).
- Individuals who live outside the market area but will travel to Lake Berryessa for a vacation (tourists).

- Previous visitors that have been displaced to other areas and no longer visit Lake Berryessa because of some undesirable site attribute or condition such as poor water quality or infusion of new types of user groups (displaced visitors).

ES.11 Recreation Supply

ES.11.1 Existing Recreation Supply at Lake Berryessa

Public use facilities and services at Lake Berryessa are currently provided by Reclamation and three existing concessionaires. Reclamation provides only limited day use facilities and opportunities while the concession-operated areas offer a combination of day use, overnight camping opportunities, and/or marina-related facilities and services.

ES.11.2 Existing Recreation Supply at Comparable Water-Based Recreation Areas

The sites selected for comparison purposes are Lake Oroville, Lake Sonoma, Folsom Lake, and New Melones Lake. These comparable sites were selected because they have similar geography, topography, vegetation, recreation opportunities, infrastructure and facilities, and socioeconomic profile. Comparing different recreation variables across several water-based recreation sites can assist in determining the existing supply of facilities and services within a reasonable distance from Lake Berryessa. Due to the lack of comparable recreation areas within the market area, one of the areas selected is on the fringe of the market area (i.e., New Melones Lake). Lake Berryessa is the largest water body within the market area except for Clear Lake and the Sacramento-San Joaquin Delta. For specific reasons discussed in the body of the Market Assessment, these two water bodies were not selected for a more detailed comparison of recreation variables.

ES.11.3 Existing Recreation Supply at Selected Recreation Areas

This section is intended only to provide a snapshot of the current supply of selected water-based and land-based recreation facilities and services near Lake Berryessa. Looking at both land-based and water-based areas can help in determining the recreation supply and what types of new recreation facilities and services might be developed at Lake Berryessa to be competitive in the market area, as well as meet current demand and the expectations of residents within the market area.

Three of the primary recreation providers in the Bay Area are the East Bay Regional Park District (EBRPD), East Bay Municipal Utility District (EBMUD), and National Park Service (NPS). The following 16 recreations areas were used to assess the supply of recreation facilities and services near Lake Berryessa: Lake Solano County Park, Clear Lake, Lake Hennessey, Indian Valley Reservoir, Sacramento-San Joaquin Delta, Sugarloaf Ridge State Park, Botha-Napa State Park, Camanche Reservoir, Pardee Reservoir, New Hogan Reservoir, Lake Amador, Lake Del Valle, Lake Chabot, Lake Merced, Golden Gate National Recreation Area, and San Pablo Reservoir. Some of these areas are owned and/or managed by the EBRPD and EBMUD. The Golden Gate National Recreation Area is part of the federal estate managed by the NPS.

The largest reservoir discussed in this section is Clear Lake, which is the largest lake in California with 43,785 surface acres. The smallest reservoir discussed in this section is Lake Amador with 385 surface acres. Four of the areas discussed in this section are considered land-based recreation areas although two of those areas are located adjacent to perennial streams (i.e., Lake Solano County Park and Sugarloaf Ridge State Park). All the areas mentioned in this section offer a certain amount of traditional outdoor recreation opportunities while some offer the same commercial services as Lake Berryessa.

ES.12 Recommended Commercial Facilities and Services

Lake Berryessa has a special rural market niche that is distinctly different than the highly developed, urbanized and intensively managed water-based recreation areas found in the San Francisco Bay and Sacramento-San Joaquin Delta areas. This may be a unique and special niche worth maintaining through careful development, and thus create a market demand.

The recommendations provided are based on sound professional judgment, basic assumptions, consideration of several factors that can influence demand decisions, opportunities, and analysis of information collected from a variety of sources.

ES.12.1 Assumptions

The recommendations for commercial facilities and services at Lake Berryessa are based upon the following primary assumptions:

- Reclamation's concession management objectives will continue to support traditional, short-term, and diverse outdoor recreation opportunities that are compatible with the Lake Berryessa RAMP and VSP.

- If future demand warrants substantial new development at Lake Berryessa, it may be necessary to look at additional sites other than the five areas discussed in this Market Assessment.

- Reclamation and concessionaires will actively market the newly developed facilities and services and collaborate with local tourism entities to attract new and past visitors to Lake Berryessa.

- Reclamation would only accept incoming concessionaires willing to implement an approved business plan that would sustain a viable business venture on a long term basis.

- The lost visitation due to the recent marina closures and trailer removals can be reclaimed in 5-10 years after the construction of new and high quality recreation facilities.

- The existing and available information used in this Market Assessment is of sufficient quantity and quality to make reasonable future projections.

- The construction of high quality recreation facilities and services will encourage return visits, increase the financial viability of commercial operators, and maintain and/or improve visitor satisfaction and user expectations.

- Reclamation will have adequate management resources (i.e. staff, boats, equipment, programs, partnerships, and monitoring capabilities) to ensure the public health, safety and enjoyment of the visiting public and that the natural and cultural resources are conserved and managed in a sustainable fashion. Without a strong and visible public agency presence, the quality of the recreation opportunities and resources will erode and the public will be displaced to other recreation settings.

ES.12.2 Key Factors Influencing Recommendations

The integrity of the Market Assessment was based upon a level 1 analysis of existing information, local expert opinions and sound professional judgment. The amount of available information considered was voluminous but there were several key factors or considerations that heavily influenced the recommended commercial facilities and services at Lake Berryessa.

The key influential factors include the following:

- Projected county population increases within the 25 county market area and Central Valley.

- Compliance with the provisions of the VSP.

- National and State of California increases (trends) in the participation of selected outdoor recreation activities that can be provided at Lake Berryessa.

- Observations made amongst the comparable recreation areas within the vicinity of Lake Berryessa.

- Higher than normal income levels of residents within the market area to support the development of quality facilities and services.
- Public need for outdoor recreation activities identified by the California Department of Parks and Recreation.
- Alternative camping options (e.g., cabins, park models, yurts, floating campsites) and their benefit to increasing recreation participation throughout the calendar year.
- Public participation and trends in recreational boating in California.
- The ability to provide services such as increased security and oversight that can mitigate pass problems (i.e., vandalism, partying) and thus attract disenfranchised and displaced visitors.
- Volume of unmet demand that can be satisfied with the development of quality recreation facilities and services that appeal to potential visitors with varied levels of income and demographic profile.
- Demand for high quality rural type recreation opportunities that are close to home (i.e., within the market area).
- Projections for many water-based activities that show increases over population growth through the year 2050.
- Projections that developed land activities, such as camping and family gatherings, are expected to increase at a rate greater than population growth through 2050.
- Projections that non-consumptive wildlife activities, such as birdwatching, photography, and other types of wildlife viewing, are expected to increase more than the population growth through the year 2050.

ES.12.3 Opportunities

There are opportunities at Lake Berryessa that can reverse any downward trends in the quality of facilities and services that were provided previously, enhance the visitor's outdoor recreation experience and meet future demand. There are opportunities to:

- Establish facilities and services that are consistent with Reclamation's VSP ROD, other planning documents, concessions directives, standards, and policy, as well as studies that are specific to Lake Berryessa.

- Establish facilities and services that provide families and friends an opportunity to get away from the many urban settings typical in California but especially within the Bay Area.

- Change the perception that Lake Berryessa is a congested and overcrowded "party lake" by marketing the lake as a safe and desirable recreation destination.

- Cooperate with Napa County in packaging and marketing the many quality outdoor recreation opportunities that are available within the county.

- Leverage the proximity of Napa Valley and its substantial visitor base when marketing Lake Berryessa to residents within the market area and potential tourists from outside the market area.

- Provide recreation areas where visitors can enjoy the sights, sounds, solitude and tranquility of Lake Berryessa, which is largely defined by its water resource, fishery, aesthetics, and surrounding wildlife areas, wilderness, and forests.

- Provide commercial operations that offer only necessary and appropriate facilities and services that are financially profitable.

- Fill a void in the limited quantity of overnight camping facilities (i.e., tent, standard and RV sites) that are currently being offered by 3 of the primary recreation providers in Bay Area (i.e., EBRPD, EBMUD and NPS).

- Offer Napa Valley visitors alternative overnight lodging options at Lake Berryessa such as yurts, tent cabins, luxury cabins and park models. These unique and quality lodging units would typically be less expensive than existing lodging options within the Napa Valley.

- Establish facilities and services that are competitive with other recreation areas within the marketplace.

- Provide facilities and services that support public participation in numerous recreation activities on a year-round basis.

- Provide facilities and services that will disperse users to different areas and potentially reduce overcrowding and user conflicts.

- Provide facilities and services that are visually appealing and harmonious in form, color, and texture with the surrounding landscape.

- Provide high quality rural type recreation opportunities that provide visitors with opportunities to experience and enjoy the natural resource-based landscape.
- Establish a recreation development strategy that may accommodate future demand through the provision of monitoring and phased development.
- Allow Reclamation to consider recreation capacity limits and recreation experiences for a diverse group of recreation users when phasing new facilities and services over time.
- Develop and market Lake Berryessa in a unique and special way that appeals to the large population base in the market area.
- Provide local communities surrounding Lake Berryessa with an opportunity to enjoy the recreation opportunities in their own backyard.

ES.12.4 Recreation Facility and Service Recommendations

The public need for the recommended facilities and services were based on the assessment of existing and future demand factors, conceptual site plan designs, infrastructure designs, and results of the FFE.

Lake Berryessa has gone through a transformation like few lakes have witnessed in such a short time. The removal of the shoreline private exclusive use trailers and several marinas following the expiration of the original concession contracts in 2008/2009 had a significant impact on the visitation at Lake Berryessa. Visitation has decreased substantially from pre 2008/2009 levels. It is difficult to judge how quickly visitation will return.

The ***required*** facilities and services recommended would be developed at the five recreation areas first to accommodate existing demand identified in this Market Assessment followed by the development of the recommended ***authorized*** facilities and services at some point during the term of the concession contract. The recommended authorized facilities and services would be developed based on future demand and other relevant factors deemed appropriate by Reclamation. If appropriate, the timeframes for development of facilities and services and support components by a concessionaire would be described in the RFP and incorporated into the contract between the concessionaire(s) and Reclamation.

Following is a general overview of the development strategy for each of the five recreation areas:

Putah Canyon Recreation Area

Putah Canyon Recreation Area would be developed as a marina and campground complex and include the appropriate number of support facilities and services to operate and maintain these types of developments (i.e., comfort stations, water spigots, trash receptacles, parking spaces). The required facilities and services will consist an entry station, overnight RV sites with utilities, standard sites without utilities, tent only sites, two entry stations, individual day use sites, a small dry boat storage area and a camp host site with utilities. Lodging facilities will consist of a limited number of park models. Sewer, power and water will be available on site. The required marina complex will consist of a floating marina, concessionaire building, numerous boat slips, boat ramp with courtesy docks, fish cleaning station, watercraft rentals, boat fuel and septic pump out stations, on-shore fuel and sanitary storage tanks, restaurant and retail shop. Based on demand and other important factors, the authorized facilities and services will consist of tent only sites, standard sites with utilities, playground, additional fish cleaning station, employee housing (park models), group day use area, vault toilet, access road gate and boat repair building.

Monticello Shores Recreation Area

Monticello Shores Recreation Area will be developed as a campground and marina complex and include the appropriate number of support facilities and services to operate and maintain these types of developments (i.e., comfort stations, vault toilets, water spigots, trash receptacles, parking spaces). The required facilities and services will consist of an entry station, tent only sites, standard sites with and without utilities, RV sites with utilities, camp host site with utilities, RV dump station and a limited number of day use sites. Lodging facilities include numerous park models and a limited number of yurts, rustic cabins and tent cabins. An on-shore boat rental building and fuel storage tank plus a limited number of watercraft rentals will also be required. Based on public demand and other important factors, authorized facilities and services will include standard sites with utilities, RV sites with utilities, hike-in/boat-in campsites, floating campsites, overnight group use area, restaurant, vault toilet, and comfort stations. A small marina with boat slips and fuel and septic pump stations are also authorized.

Berryessa Point Recreation Area

Berryessa Point Recreation Area will provide a substantial number of RV sites to meet increasing demand. Required facilities and services will include camp host site with utilities, iron ranger, boat ramp with courtesy dock, and individual day use sites. Based on demand and other important factors, Berryessa Point has an authorized small marina complex with a limited number of boat slips, restaurant, retail store, and gazebo/day use shelter for limited special events.

Spanish Flat Recreation Area

Spanish Flat Recreation Area will offer various types of camping opportunities and a small marina complex plus all the support facilities and services that are required to successfully operate and maintain these types of developments (i.e., comfort stations, vault toilets, water spigots, trash receptacles, parking). The required facilities and services consist of an entry station, RV sites with utilities, standard sites without utilities, tent only sites, and camp host site with utilities. Lodging facilities consist of yurts, rustic cabins and tent cabins. Individual days use sites will be offered. The required facilities and services at the marina complex will consist of boat slips, watercraft rentals, fish cleaning station, boat ramp, courtesy dock, on-shore fuel and sanitary storage tanks, boat fuel and septic pump out stations, and concessionaire building. Based on future demand and other important factors, Spanish Flat is authorized to offer standard sites with utilities, playground, restaurant, and retail shop.

Steele Canyon Recreation Area

Steele Canyon Recreation Area will be developed as a campground and marina complex and include the appropriate number of support facilities and services to operate and maintain these types of developments (i.e., comfort stations, water spigots, trash receptacles, parking). The required facilities and services will consist of overnight RV sites with utilities, standard sites with and without utilities, tent only sites, camp host site with utilities, a minimal number of day use sites, playground, and a group day use area. Lodging facilities will consist of park models with utilities, cabins with utilities and employee housing (park models). Sewer, power and water will be available on site. The marina complex will consist of numerous boat slips, boat fuel and septic pump out stations, on-shore fuel and sanitary storage tanks, boat ramp with courtesy docks, restaurant, retail shop, fish cleaning station, dry storage facility, concessionaire/maintenance building, and watercraft rentals. Steele Canyon Recreation Area is also authorized to have additional boat slips, a multi-use center, comfort stations and floating campsites.

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Acronyms and Abbreviations

CDPR	California Department of Parks and Recreation
COE	U.S. Army Corps of Engineers
DBW	California Department of Boating and Waterways
DEIS	Draft Environmental Impact Statement
EBMUD	East Bay Municipal Utilities District
EBRPD	East Bay Regional Park District
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FFE	Financial Feasibility Evaluation
Market Assessment	Market Assessment Report
NCROSD	Napa County Regional County Park and Open Space District
NPS	National Park Service
NEPA	National Environmental Policy Act
NRA	National Recreation Area
NSRE	National Survey on Recreation and the Environment
Pensus	Pensus Lake Berryessa Properties, LLC
Project	Solano Project
PUP	Public Use Plan
PWC	Personal Water Craft
RAMP	Reservoir Area Management Plan
Reclamation	Bureau of Reclamation
RFP	Request for Proposal
ROD	Record of Decision
RV	Recreation Vehicle
SCORP	State Comprehensive Outdoor Recreation Plan
SFPUC	San Francisco Public Utilities Commission
VSP	Future Recreation Use and Operations of Lake Berryessa aka Visitor Services Plan

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Chapter 1 Introduction

Lake Berryessa is part of the Solano Project, a federal water project owned by the Department of the Interior Bureau of Reclamation (Reclamation), which provides municipal and irrigation water to Solano County. The reservoir is located in Napa County 70 miles northeast of San Francisco, 65 miles west of Sacramento, and approximately 20 miles from the center of Napa Valley's wine country. Figure 1-1 shows the location of Lake Berryessa.

> For the purposes of this report, a Market Assessment can be defined as a process that evaluates a variety of market conditions that will determine what specific facilities and services should be provided to a particular group of customers within a certain geographical area.

Reclamation is currently involved in a commercial services planning process that will culminate in identifying the preferred development and management of necessary and appropriate long-term recreation facilities and services at Lake Berryessa. In lieu of Federal Government-provided facilities and services, Reclamation desires to offer this development opportunity and long-term management responsibility to a private entity. This business offering will be accomplished through the issuance of a Request for Proposal (RFP) that provides, among other things, detailed instructions for responding to the RFP, principal factors that need to be addressed, evaluation criteria, and the location, types and quantity of facilities and services to be provided at Lake Berryessa. All private parties who are interested in responding to the RFP must reply correctly to all RFP requirements in order to be considered and selected as a concessionaire. The selected concessionaire will be asked to provide the necessary capital to develop and operate a single concession[1] or multiple concessions at Lake Berryessa.

Reclamation is currently working to develop an appropriate level of recreation and financial information/data that will be used for the preparation of the RFP. The collected information will be used to evaluate the bid proposals that will be received from potential concessionaires in response to the RFP solicitation.

[1] A concession is a non-Federal commercial business that supports appropriate public recreation uses and provides facilities, goods, and services for which revenues are collected. A concession involves the use of the Federal estate and usually involves the development of real property improvements.

Figure 1-1. Lake Berryessa Location Map

Specifically, Reclamation is completing this Market Assessment Report (Market Assessment) as well as a set of conceptual site and infrastructure designs for proposed facilities, and a financial feasibility evaluation (FFE) that will assess the long-term financial viability of proposed facility development and management. The information provided by the Market Assessment is a prerequisite to the preparation of the conceptual site and infrastructure designs, FFE, and RFP.

1.1 Purpose and Need

The purpose of this Market Assessment is to evaluate the potential market conditions to determine the feasibility of providing new public use facilities and services at five separate and distinct recreation areas at Lake Berryessa (i.e., Steele Canyon, Spanish Flat, Berryessa Point, Monticello Shores, and Putah Canyon). Figure 1-2 shows the locations of the five recreation areas. Prior to the RFP solicitation and pursuant to Reclamation policy, there is a need to determine the (1) number of concessions necessary to meet public needs, (2) types of facilities and services to be provided, (3) financial feasibility of the concession(s), and (4) appropriate location(s) for commercial activities (Reclamation, 2002). There is also a need to identify the appropriate quantity of facilities and services that will offer diverse recreation opportunities to the public.

1.2 Methodology for Preparation of the Market Assessment

A database (i.e., quantitative) and non-database approach (i.e., qualitative) methodology was used to prepare this Market Assessment.

Qualitative assessment is the non-database methodology that relies on interviews, expert opinion, archival records, existing information and observations. Professional judgment is considered useful for long-term estimations where there are many factors that may influence future actions. Refer to Chapter 2 for a list of factors as well as issues, concerns and observations that can influence demand and future capital investments in development of facilities and services.

Quantitative assessment (i.e., collecting and analyzing data/information) is the database methodology that was used. This methodology consists of collecting and analyzing a sufficient amount of recreation demand, trend, demographic, and population information. The information is used to estimate what types of facilities and services would be provided in the future to accommodate a particular type of activity and user. The recommended facilities and services are those that could satisfy future demand predictions and potentially allow a concessionaire an opportunity to make a reasonable profit.

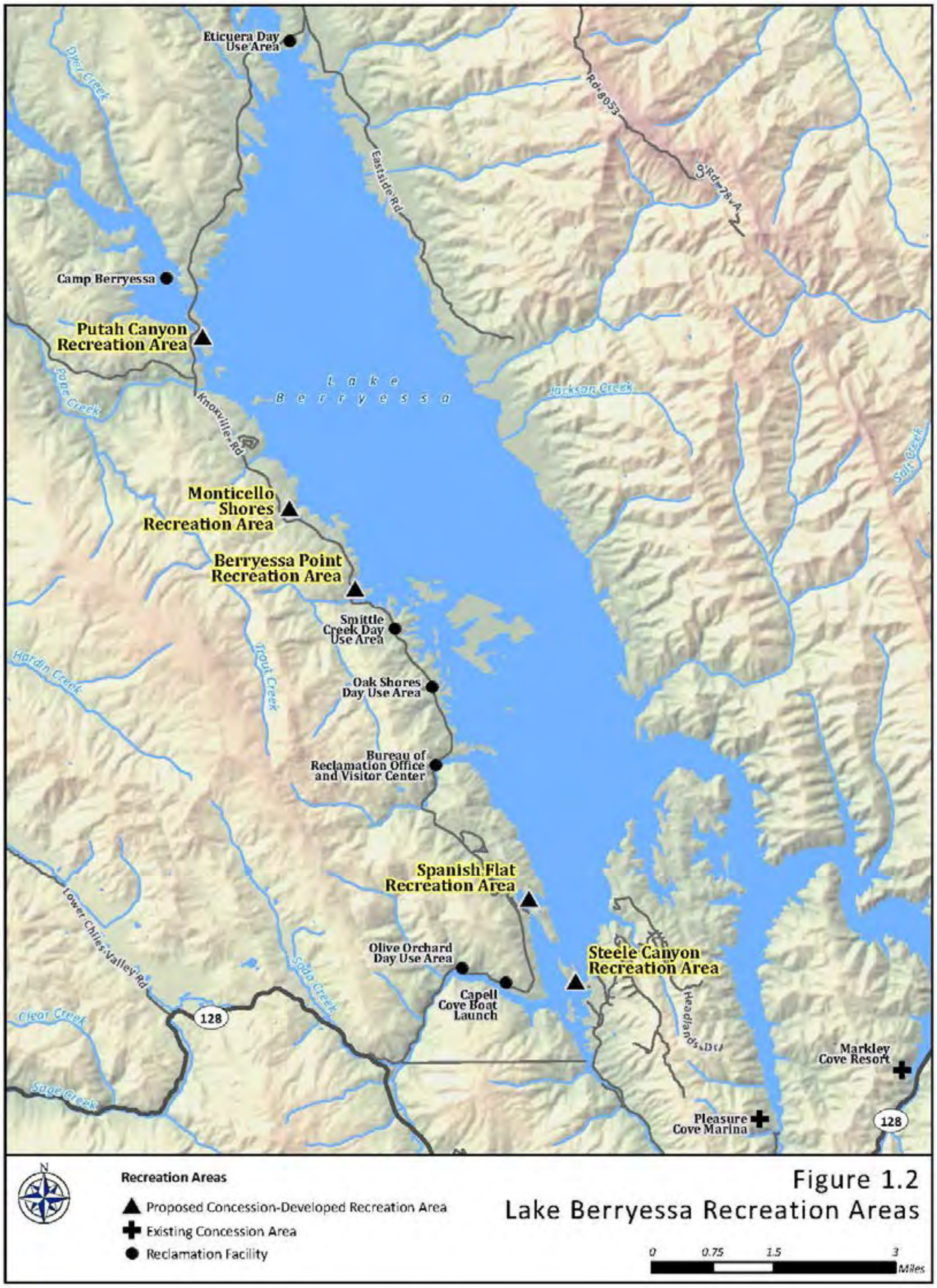

Figure 1-2. Lake Berryessa Recreation Areas

Many of the database tools used to estimate future recreation demand rely on the availability of various forms of detailed information to apply a wide range of mathematical and statistical forecasting procedures. A database approach is not necessarily more accurate than a less complex non-database approach; however, the more complex, technical approaches often allow for statistical testing which can help validate results (Reclamation, 1996). No mathematical or statistical forecasting procedures were used for preparation of this Market Assessment.

Following are the important tasks completed in preparing the Market Assessment, summarized in Figure 1-3.

- Identify the Lake Berryessa market area (i.e., the geographic area or “visitation range” where typically 75% of the potential visitors to Lake Berryessa reside).

- Collect and analyze an appropriate level of national, state, and county demographic, economic, and population data.

- Estimate current recreation demand (i.e., current use) in the market area (e.g., number of separate recreation areas within the vicinity of Lake Berryessa) and the types of opportunities available.

> Unmet demand is the number of people who would like to visit a recreation site, but for various reasons do not.

- Estimate future demand for key recreation activities and appropriate facilities that compliment and support those key activities. If appropriate data exists, the unmet demand will be identified.

- Analyze the nature/character and amount of recreation-related opportunities at recreation areas within the market area of Lake Berryessa.

- Analyze recent public forum notes, user satisfaction surveys, boating surveys, and other available information to extrapolate information that can be used to identify facilities and services that might be financially feasible and increase user satisfaction, enhances the visitor’s experience, and encourages return visits.

- Consult with Reclamation staff, tourism officials, marina operators, comparable operators/owners, and other experts with information useful in preparing this Market Assessment.

- Consult with Reclamation staff about visitation numbers to assess past and current recreation use at Lake Berryessa including, but not limited to, the type and amount of recreation participation, issues associated with resource and visitor conflicts, safety issues, occupancy rates of facilities, management issues with marina operations, public issues and concerns, visitor access to sites, crowding and congestion, seasonal use and locations, and other pertinent factors.

- Consult with key recreation professionals and experts to determine future growth, trends in outdoor recreation, direction, and desired market niche. This includes water-based as well as land-based recreation sites in the area.

- Identify constraints, opportunities, and potential limiting factors in providing the necessary and appropriate facilities and services. Recommend possible solutions or mitigation measures to resolving the identified constraints and limiting factors to include possible phasing of development over time.

Figure 1-3. Task Flow Chart

1.3 Project Limitations

There are several factors that will likely affect the level of accuracy and precision of the recommendations regarding the types, quantities and locations of new facilities and services at Lake Berryessa. Following are the main factors:

- The Market Assessment is based upon an analysis of existing information and data available from Reclamation, campground and marina operators, county and state plans and websites, and other readily available public documents.

- There was no original data collection completed using community or market area surveys, focus groups, interviews, or other traditional public input/measurement tools.

- Historical Lake Berryessa recreation visitation data and reports showing past user satisfaction levels, trends, seasonal use patterns, or profiles of visitors are minimal.

- The major transformation over the past 10 years at Lake Berryessa in the type, amount, availability of traditional recreation opportunities, and the cessation of several marinas disrupts the ability to forecast the future demand and preference for certain facilities and services.

1.4 Lake Berryessa Concession Concept Planning Process

The types, quantities and ultimate locations of facilities and services documented in Chapter 4 of this Market Assessment were arrived at through an iterative concession concept planning process. This comprehensive planning process included (1) completion of preliminary recommendations of the necessary and appropriate facilities and services, (2) draft conceptual and infrastructure designs, (3) final FFE, and (4) final Market Assessment and conceptual and infrastructure designs. The types, quantities and locations of the facilities and services recommended for the five recreation areas at Lake Berryessa were not finalized until the FFE identified the appropriate mix of facilities and services that were determined to be financially feasible and could be development given the existing land base. Refer to Figure 1-4 for a description of the tasks associated with each of the five planning steps.

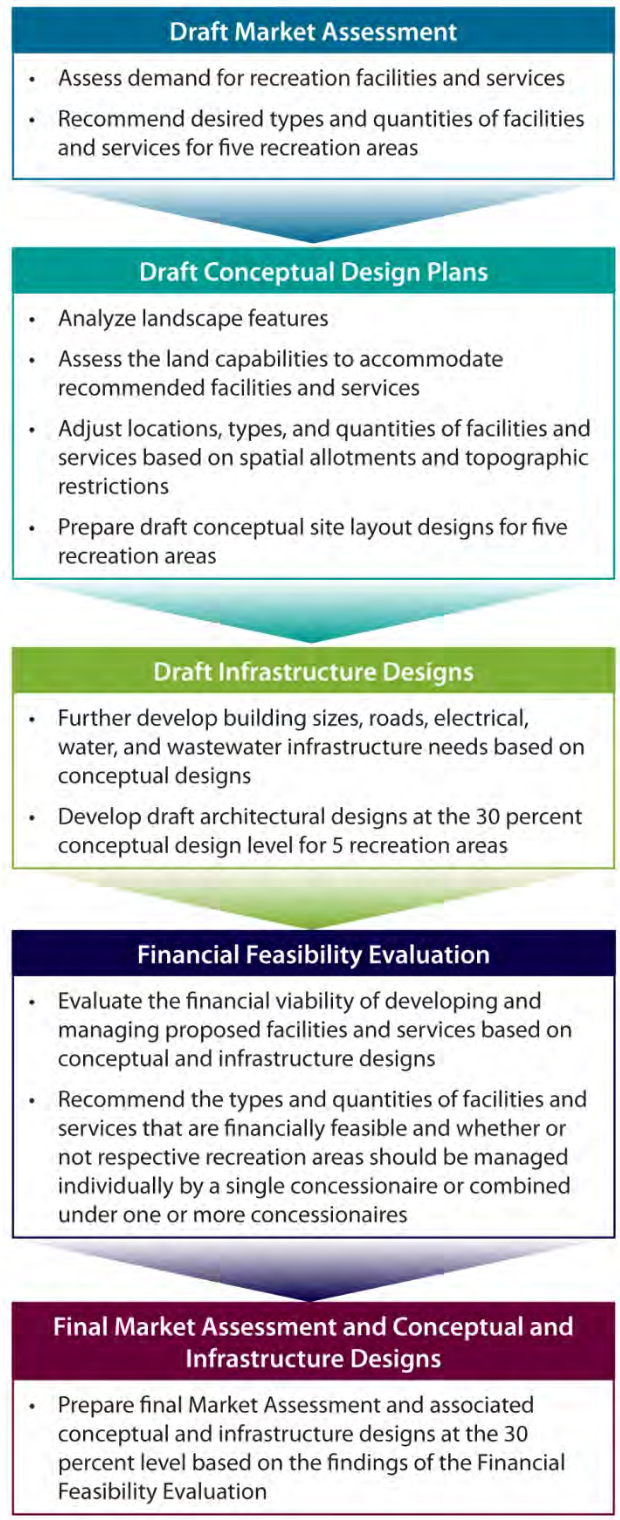

Figure 1-4. Concession Concept Planning Process Flow Chart

1.5 Overview of Lake Berryessa

Lake Berryessa is part of Reclamation's Solano Project (Project). The Project was authorized by the Congress in 1948 under the terms of the Reclamation Project Act of 1939. The Project was authorized for flood control and to supply water for irrigation, municipal, and industrial uses. However, due to the anticipated radically fluctuating water levels, recreational use was initially considered not important. The main primary Project feature is Monticello Dam that was constructed in 1957 on Putah Creek. Both the dam and hydroelectric powerplant are operated by Solano County Water Agency. Lake Berryessa was formed by the damming of Putah Creek and has a total water storage capacity of 1.6 million acre-feet[2] and 19,250 water surface acres. The lake is one of the largest fresh water lakes in California and has 165 miles of shoreline. The lake is approximately 23 miles long and 3 miles wide, at the widest point. Reclamation has federal jurisdiction over 28,916 acres of land surrounding the lake primarily for Project, recreation, and wildlife purposes. Reclamation and the California Department of Fish and Wildlife jointly manage a 2,000 acre wildlife area on the east side of the lake.

In 1958, Reclamation entered into a management agreement with Napa County for the development of public use facilities. Napa County subsequently entered into seven concession contracts with private entities for the development of facilities on 1,700 acres of federal lands surrounding the lake. However, the development of facilities by the seven concessionaires did not follow the Public Use Plan (PUP) that was prepared in 1959, but instead focused on developing trailer/mobile home parks instead of public campgrounds and day use facilities.

Audits by the General Accountability Office in 1971 and the Department of the Interior Office of Inspector General in 1995 and 2000 required Reclamation to address health, safety, and exclusionary issues associated with the nearly 1,500 long-term trailers and mobile homes located on federal property around the lake.

In March 1974, Napa County notified Reclamation that it was returning public use management of the lake back to Reclamation. In October 1974 and prior to the official termination of the agreement with Napa County in 1975, the Congress passed Public Law 93-493 that authorized Reclamation to assume management of the concession areas and to expend up to three million dollars for development of recreation facilities to be operated directly by Reclamation. After Reclamation assumed management, the PUP was reviewed and subsequently modified to better reflect the existing concessionaire developed facilities and define recreation and land use objectives at the lake. As a result of Public Law 93-493, Reclamation developed the first non-resort public facilities

[2] An acre foot is a term used in measuring the volume of water needed to cover 1 acre (43,560 square feet) 1 foot deep (325,851 gallons or 1,233.5 cubic meters).

at the lake. These new public use facilities were immediately accepted by the public and provided access for short-term recreational use.

In 1980, Public Law 96-375 was enacted that, among other things, authorized the Secretary of the Interior, at the request of the existing concessionaires, to extend the original 30-year contracts for no more than two consecutive terms of 10 years each, for a total of 50 years. The contracts were otherwise due to expire in 1988/1989. The Secretary eventually invoked the full extent of the authority that would result in the contracts expiring in 2008/2009.

- Prior to their expiration, Reclamation initiated a planning effort to evaluate future recreation operations at Project lands and Lake Berryessa. A final Environmental Impact Statement (EIS) on future recreation operations was published in 2005 for the document titled "*Future Recreation Use and Operations of Lake Berryessa*," and a Record of Decision (ROD)[3] was signed in 2006. This document is hereafter referred to as the Visitor Services Plan (VSP). Refer to the section below for a more detailed discussion of this document. The ROD included the removal of 1,500 privately owned trailers and construction, through successor contracts, of a diverse range of new recreation facilities at the seven concession areas at Lake Berryessa.

- Since the expiration of the original contracts, Reclamation has removed the 1,500 privately owned trailers and personal property as required by the ROD, and has conducted an extensive clean-up program, including removal of all former concessionaire facilities and personal property, as well as environmental remediation at all concession areas.

Per the terms of the ROD, recreation services at Lake Berryessa's seven concession areas are to continue to be provided through commercial concession services. Planning to award new long term contracts for concession operated recreation services was conducted in 2007 and again in 2009, through a competitive RFP process with successful awards made for all seven concession areas in spring of 2010.

The seven concession areas at Lake Berryessa were assigned to two long-term concessionaires. Pensus Lake Berryessa Properties, LLC (Pensus) was assigned operations at five of these areas (which Pensus renamed Lupine Shores, Foothill Pines, Blue Oaks, Manzanita Canyon, and Chaparral Cove) and was scheduled to take over operations at a sixth site (Mahogany Bay, formerly Markley Cove) on May 27, 2013. Markley Cove was being operated under an interim contract by its former concessionaire until May 26, 2013. Forever Resorts Inc. (doing

[3] A ROD is a concise public record of an agency's decision or an agency's recommendation to the Congress following the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. A ROD only applies to actions for which an Environmental Impact Statement has been prepared.

business as Pleasure Cove Marina, LLC) was assigned to operate the seventh concession area, Pleasure Cove Marina, under a 30 year concession contract.

On December 6, 2012, Reclamation notified Pensus of its decision to terminate Concession Contract #10-LC-20-0184 for default due to their failure to comply with the terms of the contract. The termination was effective on December 9, 2012. The decision affected the provision of public recreation services at five of the seven concession areas at Lake Berryessa (the sixth concession area was still being operated by the former concessionaire at that time).

As a result of Pensus' termination during the winter of 2012/2013, Reclamation implemented an immediate plan to provide basic services at three sites formerly operated by Pensus (Lupine Shores, Foothill Pines and Chaparral Cove) through government operations. In the spring of 2013, Reclamation entered into interim concession contracts at these three sites to provide recreation services for the next two to four recreation seasons, until new long-term concession contracts can be awarded. Additionally, a new interim concession contract was awarded to the existing operator at Markley Cove for continued operation of existing facilities for two to four recreation seasons. Pleasure Cove Marina continues to be operated under its long-term contract.

In January 2013, Reclamation established the Lake Berryessa Community Forum (Forum) as outlined in the ROD. The regular meetings of the Forum provide an opportunity for public and agency involvement to promote communication, thoughtful consideration of interests, consistency and uniformity, and constructive resolution of problems or conflicts.

As an early outcome of the Forum, Reclamation has permanently renamed the concession areas as follows:

- Lupine Shores is named Steele Canyon Recreation Area
- Foothill Pines is named Spanish Flat Recreation Area
- Blue Oaks is named Berryessa Point Recreation Area
- Manzanita Canyon is named Monticello Shores Recreation Area
- Chaparral Cove is named Putah Canyon Recreation Area

Markley Cove Resort and Pleasure Cove Marina will retain their names through the terms of the current interim concession contract/long term contract, respectively.

In the spring of 2013, Reclamation again began planning for the future long-term management of the concession areas by commercial businesses as called for in the ROD, with the goal of providing a diverse range of sustainable, short-term recreation opportunities for the public in the seven concession areas. To achieve a successful solicitation and economically sound business ventures, these recreation services will be designed using a combined approach consisting of a comprehensive market assessment, conceptual site planning and financial feasibility evaluation along with infrastructure design and environmental analyses.

Continuing input from the Forum will help Reclamation to understand the public's interests for management and development of the concession areas.

1.6 Guidance Documents Affecting Lake Berryessa Recreation and Commercial Services Management

Recreation and land management activities at Lake Berryessa are governed by a variety of laws, internal policies, directives and standards, planning and guidance documents, and studies. As much as possible, this Market Assessment must be consistent with the following.

1.6.1 Solano Project Authorization and Public Law 93-493

The Project was authorized by the Secretary of the Interior on November 11, 1948 under the terms and conditions of the Reclamation Project Act of 1939. As is typical at most Reclamation reservoirs/lakes, the use of Project lands shall be compatible with and not interfere with the primary Reclamation Project purposes (i.e., flood control and water delivery for irrigation, municipal, and industrial uses). Additionally, any authorized public use of Lake Berryessa lands and waters for public use will comply with the stipulations and guidance contained in the Reclamation Development Act of 1974, Public Law 93-493, 88 Stat. 1486.

1.6.2 Public Use Plan

The PUP for Lake Berryessa was prepared by the National Park Service in 1959.[4] The PUP included a General Development Plan that would guide development to include: (1) the capacities of the land and water to accommodate public use, and (2) the recreation needs and desires of the people who would use the area (Reclamation, 1992).

1.6.3 1992 Reservoir Area Management Plan for Lake Berryessa and 1993 Record of Decision

From the time that Napa County turned back management of Lake Berryessa to Reclamation in 1975, the concessionaires continued to promote long-term, private exclusive use at the concession areas. Due to the fact that the concession areas occupied the best access points to the lake and created overcrowding conditions in these areas, Reclamation determined there was a need to update the 1959 PUP to address carrying capacity issues and the

[4] In the beginning of federal water project development by Reclamation, the National Park Service was often actively involved in recreation planning activities.

diversity of recreation opportunities at the lake. Therefore, the 1992 Reservoir Area Management Plan (RAMP), EIS, and associated 1993 ROD was prepared to provide additional guidance and a framework for planning, developing, and managing Lake Berryessa's natural resources, land and recreation programs, and public use facilities in an environmentally sensitive manner. Since the RAMP is currently in effect, the Market Assessment recommendations shall be consistent with the RAMP and ROD, as applicable.

1.6.4 2005 Future Recreation Use and Operations of Lake Berryessa and Record of Decision

Reclamation initiated a visitor services planning process in 2000 that led to the preparation of the VSP ROD. Reclamation initiated the visitor services planning process in compliance with the National Environmental Policy Act (NEPA) requirements. The primary objective of this NEPA planning effort was to solicit public participation and input in determining the future recreation use and operation of the lake prior to the expiration of the existing concession operations that were in place at that time. After extensive public involvement, a draft EIS (DEIS) was completed in 2003 that identified four broad alternatives. After public review of the DEIS, Reclamation prepared a final EIS (FEIS) in 2005. The FEIS identified Alternative B as the preferred visitor services management strategy. The main focus of Alternative B was to develop new facilities and programs that would better serve short-term visitors to the lake. Pursuant to the documented actions in Alternative B, all long-term, private exclusive use trailers and mobile homes would be removed and replaced with short-term facilities according to a plan developed for each individual concession area. After another round of public involvement, the VSP ROD was finalized in 2006. Alternative B was modified to include certain elements of Alternatives A, C, and D as well as key recreation-related provisions from the 1992 (RAMP) and its associated ROD. The Market Assessment shall be prepared in a manner that is consistent with the VSP ROD. Specifically, the Market Assessment will recommend the ***required***[5] facilities and services that will be developed and managed by a perspective concessionaire and, if applicable, recommend additional facilities and services that may be ***authorized.***[6]

As stated, the 2006 VSP ROD outlined the framework for the development of new facilities and programs that better serve the short-term visitors to Lake Berryessa. The basic management principles outlined in the VSP ROD and that pertain to this Market Assessment are those that:

- Guide and support lake-wide federal and commercial operations in the interest of visitors.

[5] Required facilities and services are those types of facilities and services that a concessionaire is required to offer to the public. Required facilities and services are not optional and must be provided.
[6] Authorized facilities and services are those types of facilities and services that a concessionaire is authorized to provide during the term of the concession contract based on demand and other factors as determined by Reclamation to be applicable.

- Limit future development to those facilities that support short-term, traditional, non-exclusive use, and diverse recreation opportunities.

- Specify the types of public occupancy facilities (i.e., day use, short-term, and annual) that will be permitted within three specific geographic areas at each potential concession area. Those specific geographic areas are described in terms of elevations above mean sea level (MSL) as prescribed in the 1992 RAMP and reservoir capacity allocations for the Project.

Following is a list that summarizes all facilities identified in Alternative B of the FEIS, certain elements of Alternatives, A, C, and D of the FEIS, and key recreation-related provisions from the 1992 RAMP ROD. Pursuant to the VSP ROD, a proposed concession operation may include any or all of the following facilities listed in Table 1.1. A more definite list of facilities with occupancy and location requirements will be included in the RFP. Refer to Chapter 4 for the consolidated recommendations on the identified types, quantities, and locations of required and authorized facilities and services.

Table 1-1. List of Facilities and Services Contained in the VSP ROD

Day-Use Facilities	**Marina Facilities**
Picnic sites	Boat launch ramps
Swimming areas	Slip rentals
Canoe/kayak launch	Houseboat – private
	Houseboat – rentals
Overnight-Use Facilities	**Boat Storage Facilities**
Cabins	Fish cleaning station
Cottages	Marin fuel facilities
Park models	Retail facilities
Hotel/motel	Restaurants
Lodge/lodging center	Cafes
Youth/elder hostel	Snack bars
Conference facilities	
Tent camping	
RV/travel trailer sites with full hookups	
RV/travel trailer sites – other	
RV/travel trailer dump stations	
Restrooms, showers, laundry	
Support infrastructure	

Source: Bureau of Reclamation, 2006.

1.6.5 Reclamation Directives and Standards, and Guidelines

In addition to existing laws such as the Reclamation Recreation Management Act of 1992 (Public Law 102-575, Title 28), recreation and land resource programs at Lake Berryessa are managed in accordance with the *Reclamation Manual* that consist of a series of Policy Statements, Directives and Standards and associated guidelines, if applicable. Policy Statements establish the overall goals, objectives, and guiding principles for a specific Reclamation-wide program that reflects the leadership direction of Reclamation's top management. Directives and Standards are mandatory actions that are required on a Reclamation-wide basis to provide consistency in the way Reclamation programs are managed. The Policy Statement that is applicable to concessions is titled Concessions Management, LND PO2[7]. The Directive and Standard that is applicable is titled Concessions Management by Reclamation, LND 04-01. Reclamation has comprehensive concession management guidelines that are currently under revision.

Decisions to contract for concessions on Reclamation lands must be based on the results of a commercial services planning process that includes public involvement, financial feasibility evaluation, and environmental analysis. During the planning process, the following key criteria will be applied to determine appropriate facilities and services:

- Facilities and services must be necessary and appropriate for a broad spectrum of public use and enjoyment.
- Commercial facilities must not be developed or expanded on the federal estate if existing facilities, on or off the federal estate, adequately meet current and projected needs.
- Facilities and services must reflect the general public's needs rather than the desires of a particular individual or group. Existing concessionaires may provide input through the public involvement process.
- The financial feasibility evaluation must consider, among other things, the concession's gross revenues, operating expenses, capital investment costs, and cash flow analysis.
- Facilities and services must be compatible with Reclamation project purposes.
- Facilities, services, and sites considered to be exclusive use will not be allowed.

[7] These designations refer to the numbering system of the Reclamation Manuals. For example LND 04-01 is the Land Series, part 04, chapter 01.

- Potential impacts to natural and cultural resources must be considered in the development of facilities and services.
- Facilities must be harmonious in form, line, and texture with the surrounding landscape.
- The planning process will consider whether existing concession facilities should be relocated due to a variety of conditions such as limited expansion room or the site cannot accommodate demand.
- An evaluation to determine if existing condition and useful life of facilities is sufficient to last through the duration of any new contract.

All *Reclamation Manual* Policy, Directives, and Standards can be downloaded by accessing Reclamation's *Manual* website at http://www.usbr.gov/recman/.

Chapter 2
Recreation Demand

The majority of people that visit Lake Berryessa reside in the San Francisco and Sacramento areas. About 75 percent of the historical visitors to the lake were from the San Francisco Bay Area and approximately 20 percent were from the Sacramento area (Fletcher et al, 1997). The market area for this Market Assessment encompasses an area within a100-mile radius of Lake Berryessa. Figure 2-1 shows the market area. The market area includes the 9 counties that make up the Bay Area (i.e., Santa Clara, Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Solano, and Sonoma) and an additional16 representative counties that are within the market area and a reasonable driving distance from the lake (i.e., Amador, Butte, Calaveras, Colusa, El Dorado, Glenn, Lake, Mendocino, Nevada, Placer, Sacramento, San Joaquin, Stanislaus, Sutter, Yolo, and Yuba). To understand what future facilities and services are appropriate and necessary at Lake Berryessa, it is necessary to collect an appropriate level of data and information about the recreation environment from within market area as well as outside the market area (e.g., national and the rest of the State of California).

> Recreation demand is the estimated number of people who are projected to participate in a particular recreation opportunity at some predetermined future time and location (Haas, et al, 2007).

A major goal of this chapter is to provide an appropriate level of information that can be analyzed and used to identify what new facilities and services would support a diversity of traditional public recreation opportunities at a level that meets current and future public demand. Therefore, this chapter describes the qualitative considerations that may affect demand within the market area (i.e., factors, general issues, concerns and observations, perceptions of Lake Berryessa, facility needs, capacity issues, and recreation trends). This chapter also describes the quantitative considerations that may influence recreation demand (i.e., national, State of California and local recreation participation levels, demographics, and population data). Also included in the chapter is a discussion of unmet demand and alternative camping options.

2.1 Qualitative Considerations

This section reports on the qualitative (non-data) information deemed important in recommending the necessary and appropriate facilities and services at Lake Berryessa.

Figure 2-1. Lake Berryessa Market Area

2.1.1 Factors Affecting Demand

Recreation demand, both current and future, is influenced by a multitude of factors ranging from population increases to visitor satisfaction/dissatisfaction, from reasonable prices to resource impacts, from public safety to rules and regulations, and from drive time to solitude. Recreation demand is not as simple as the cliché "build it and they will come."

The following are several factors that can affect recreation demand and influence the development recommendations for Lake Berryessa:

- More diversity in terms of race, culture, age, income, and other factors will change the demand for outdoor recreation but should not diminish the size of the overall market. Diversity will result in different preferences, expectations, and ways of seeking and participating in recreation activities. For example, Hispanics will be the largest demographic group by 2030, comprising 43 percent of the State of California's population (California Department of Parks and Recreation, 2009).

- Outdoor recreation is being re-shaped by an increasing number of non-white visitors. Increasing population statistics would also suggest an increasing number of non-white visitation.

- Nationwide, recreation use of available sites will continue to increase. This is a result of the effect of the "baby boomer" generation, increased leisure time, new recreation technologies, and increased public information about recreation opportunities in rural and urban settings. This necessitates creative solutions and public/private partnerships to keep up with demand. For example, active seniors 55 to 75 years of age in California will double in size within 20 years (California Department of Parks and Recreation, 2009).

- High quality facilities and services would likely increase visitation and financial sustainability.

- Rules and enforcement, or lack thereof, speed and excessive noise from engines or music will affect market demand. The allowable speed limit, wakeless areas, closures, and excessive noise will be the second key determinant affecting boating capacity, public image and reputation, and the quality of the recreation opportunities at Lake Berryessa.

- Distribution of marinas will affect market demand. That is, marinas are the portal for many boats to enter the main lake channel and coves. Marinas should be dispersed to avoid unnecessary traffic and boater congestion and safety concerns in the main channel and nearby coves. Crowding, congestion and safety concerns (e.g., accident violations) will directly affect market demand, public image and reputation, and the quality of the recreation opportunities at Lake Berryessa.

- Income inequality can have an effect on market demand. For example, as California's population increases, the number of people at the lower end of the income scale is increasing at a disproportionally higher rate. It is suspected that outdoor recreation needs of low-income people are different mostly due to lack of discretionary income, time, and transportation options for outdoor recreation (California Department of Parks and Recreation, 2009).

- The water level and associated drawdown affects the supply of outdoor recreation and thus can affect the demand. There is a water level that may be too low, at which time recreation access, fisheries habitat, aesthetics, backwater areas, wildlife, boat ramps and moorings, and visitation are negatively affected. This water level would result in an associated decrease in recreation satisfaction and values. Conversely, there is also a water level that may be too high, at which recreational fishing, shoreline stability, turbidity, water quality, public safety, facilities, beaches, habitat, and visitation are negatively affected. This water level would result in an associated decrease in recreation satisfaction and values.

- In water-based outdoor recreation, the key part of the desired recreation experience occurs not in the built-developed settings but out on the water. The "boat capacity" of a lake will influence recreation demand as well as the number, type and location of facilities, amenities and uses.

- Over time with changing agency personnel and concessionaires, there is often an "incremental increase" in the number and type of recreation facilities, amenities, and uses that are being provided. This slow and often subtle change will eventually alter the recreation demand and the market segment of visitors being attracted to the area, and can cause a loss of visitation and economic activity.

- Shifting interests and preferences will have an effect on recreation demand. Traditionally, people have "escaped to parks" as the stress of jobs, traffic, and urban noise increases (California Department of Parks and Recreation, 2009). Outdoor recreation is relatively recession-proof in terms of gross participation and number of people. During these times, people will take fewer trips, not travel as far, stay longer, and do more locally in the vicinity of the destination area. Lake Berryessa could see an increase in use with continued economic troubles with market area visitors staying closer to home, travelling within the state, and visiting in-state destinations such as state and federal recreation areas.

- The demand for traditional outdoor recreation remains high in the United States and California. As the population increases and more people take advantage of local, state and federal parks, the demand for new recreation facilities and services will only increase.

- Lake Berryessa has received widespread public attention in the past decade because of Reclamation’s efforts to remove the existing marinas and the 1,500 private exclusive use trailers, and develop more traditional recreation facilities for use by the general public. The actions that occurred during this time period will affect demand in the short-term (e.g., 5-10 years).

- Marina development without commensurate recreation management presence (i.e., patrol, law enforcement, rules and regulations, entrance stations) and resource conservation management/protection (i.e., closures, habitat enhancement, signage, and patrols) would likely affect demand. If a marina is not managed correctly and resources are not protected, visitors will react accordingly and seek alternate sites to participate in their outdoor activities.

- Water is the key attraction at Lake Berryessa. Any long-term (e.g., 1-3 seasons) changes in the quality or quantity (i.e., drawdown to conservation pool) of the water resources would likely alter the demand. In this case, visitors would be displaced to other recreation settings.

- Unforeseen episodic events can alter demand. In the case of Lake Berryessa, such events as forest fires, earthquakes, economic recession, water quality contamination, drought, or dam safety could alter the Market Assessment demand forecasts.

- Like other sectors of a market economy, recreation demand does not simply increase with greater supply of facilities or investment. There is an optimal range of investment and supply of facilities in order to meet and sustain a level of demand before there is decline. More development is not necessarily better.

- Tourism is maturing in the Napa Valley and is a major economic force. The tourism industry, both statewide and in Napa Valley, is improving its marketing and visibility and can affect demand. Reclamation and potential concessionaires can leverage the closeness of Napa Valley to Lake Berryessa in marketing new facilities and services to potential visitors.

2.1.2 General Issues, Concerns, and Observations Affecting Demand

Certain issues, concerns, and observations have been made that will influence demand and the development of new facilities and services over the life of the pending concession contracts. Some of the observations may lead to alterations of management practices and site attributes to increase user satisfaction and visitor experiences thereby increasing the demand at Lake Berryessa. Following are several issues, concerns and observations:

- One of the most important management decisions in planning and developing a recreation setting relates to the type of visitor experience the area is being managed for (e.g., an urban, rural or primitive recreation experience). This decision sets the sideboards for subsequent decisions related to the number and type of facilities, uses, rules and regulations, and acceptable activities.

- Proposals such as cabins and/or park models with plumbing and electricity, and picnic/group campsites are likely to increase visitation particularly among younger users.

- Lake Berryessa has had a reputation for being a “party lake” in the summer season with large groups of people, loud music, high-speed boats, late-night frivolity, along with crowding and congestion. Often this use was in conflict with other water and shoreline-based recreation uses and resource values. Reclamation and future marina operators have an excellent opportunity to begin anew and avoid that type of undesirable use and conflict with the intended management purposes of the lake.

- The highway access to Lake Berryessa is modest and rural in keeping with the setting. In some respects, the highway access helps to manage the number and size of recreational vehicles, boats, and houseboats, trucks, and trailers accessing Lake Berryessa. An expansion of the highway system would likely alter demand.

- As stated previously, a particular recreation setting like Lake Berryessa cannot be all things to all people. Each setting has a particular niche and market segment for desirable recreation experiences that are being managed for. There is a point where diversity of facilities, uses, activities, and people becomes problematic and can lead to visitor complaints, conflicts, crowding, congestion, loss of visitor satisfaction, public safety issues, and a change or decline in visitation due to visitors being displaced.

> A recreation setting is a geographic location comprised of physical, social, and managerial attributes where a person participates in a particular activity to have a specific type of experience. Managers manage the recreation setting.

- In an attempt to allow for any recreation opportunity where there is financial appeal, there will be visitor conflict, complaints, dissatisfaction and displacement to other locales. By clearly defining and focusing on the market niche for Lake Berryessa, and making subsequent decisions in accordance, the quality of the recreation opportunities and the willingness to pay for such quality will be enhanced and demand should increase.

- Private recreation development has a public management cost in terms of agency staffing, rules and regulations, patrol and visitor management, public safety, maintenance, and time and effort. Management capacity, both private and public, needs to be considered in planning and recreation development.

- There are several major decisions in the development of the marina(s) and management of Lake Berryessa that will define its market niche, type and amount of public visitation, and its reputation in the future. These factors will affect the financial sustainability of any marina operation.

- Recreation participation is experiencing growth in all types of recreation settings, with multiple activities often occurring in the same setting. This often results in user conflicts between competing recreationists requiring carefully considered management strategies.

- As recreation demand increases, major outdoor recreation providers must continue to provide traditional outdoor opportunities closer to urban areas where most of the people seeking the activity live.

- Increased interest in promoting and marketing recreation opportunities will attract new visitors and most likely result in repeat visitation with associated benefits to the local economy.

2.1.3 Lake Berryessa Boater Perceptions and Facility Needs Affecting Demand

A statewide and regional boater survey conducted in 2002 by the California Department of Boating and Waterways (DBW) included, among other things, a discussion of existing facilities, problems, and facility needs for each of the 10 regions defined by the DBW. Lake Berryessa is in the DBW San Francisco Bay Region that consists of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, and Solano Counties. One must keep in mind that this survey was completed prior to the expiration of the original 7 concession contracts in 2008/2009 and the subsequent removal of the 1,500 private exclusive use trailers and personal property. Therefore, some of the findings dealing with problems and facility needs were based on less than desirable conditions that existed at Lake Berryessa prior to 2008/2009. The findings of this study can still help in determining the demand for specific types of facilities and services.

All regions within the state have summer peaks and winter lulls in boating, but seasonal variations in boat use are generally more extreme in the interior that on the coast. Next to the use of San Francisco Bay and the Sacramento-San Joaquin Delta, survey respondents listed Lake Berryessa as their primary waterway within the San Francisco Bay Region (California Department of Boating and Waterways, 2002). The primary reason for these three waterways being selected as primary waterway is their relative close proximity to a large population center (e.g., San Francisco Bay Area). The following findings of the survey are specific to Lake Berryessa and suggest a demand for certain types of facilities and services within the market area (e.g., more law enforcement to deter illegal activities).

- The problems identified at Lake Berryessa included accidents, boating under the influence, congestion at launch ramps, inadequate facilities, high frequency of fatalities, illegal swimmers, insufficient water depth, parking capacity, rowdy partiers, and vandalism.
- Respondents wanted more facilities, launching capacity, dry storage, parking capacity, paved parking lots, transient/guest docks and better waste pump outs.
- Next to Clear Lake and Sacramento-San Joaquin Delta, Lake Berryessa was chosen as the third most popular waterway in the San Francisco Bay Region because it was close to home.
- Lake Berryessa was ranked 14th among the top 25 waterways in the state for boats under 26 feet.
- Lake Berryessa ranked 5th of the top 15 waterways in the state as being overcrowded.
- Respondents identified a need for another boat repair shop.

2.1.4 Boating Capacity Issues Affecting Demand

Recreation demand is constrained by the recreation visitor capacity of a particular recreation setting. Capacity is the amount and type of recreation activities and facilities that will enable the desired management goals and objectives of the setting to be achieved (Haas, 2011). There are several considerations deemed important in recommending the necessary facilities and services at Lake Berryessa.

- The number and size (i.e., length and sleeping space) of houseboats, private and commercial, permitted to moor on the lake at any one time. Houseboats, both their size and accompanying noise and activity, consume a large foot-print on the lake and will displace other boats and users. The size and number of houseboats is a key determinant affecting boating capacity on the lake at one time, public image and reputation, and the quality of the recreation opportunities at Lake Berryessa.

- Several major factors affecting "boat capacity" and subsequently marina development is the question of boat speed, boat size, boat noise, and visual sightings. Faster speeds, louder boats (including engine noise and often music), and larger boats effectively have a larger footprint and consume greater physical and psychological space. For example, a lake with jet skiing and water skiing has less boat capacity than a lake managed for slower fishing craft. Likewise, a large 12-person houseboat consumes more space on a lake than smaller 4-person family houseboats. The mix of high speed vessels available as rental units needs careful consideration.

- There are both private and commercial houseboats on the lake. Private houseboats are owned by a private individual who then rents a wet slip in a marina for a period of time, such as one year. Commercial (i.e., rental) houseboats are owned by the marina corporation, moored in a wet slip in the marina, and rented out to individuals or groups for typically 3-7 day excursions on the lake. A key houseboat capacity determination is the number of quality overnight mooring sites in coves along the shoreline.

- An important distinction between private and commercial houseboats affecting the houseboat capacity is the percentage of these vessels that are out on the lake (i.e., beyond the marina) on any summer weekend. Based upon interviews with the owners of Markley Cove, Pleasure Cove and Pensus prior to their termination, the percent of private houseboats that leave their marina wet slip and moor overnight on the lake on a summer weekend is about 40 percent. Likewise, the percent of commercial houseboats leaving the marina to be out on the lake is about 95 percent (Haas, 2011).

2.1.5 Recreation Trends Influencing Recreation Demand

Recreation-related trends can influence future demand for creation of new or different types of public outdoor recreation opportunities. A lack of understanding of current and anticipated water-related recreation use trends hamper a water resource manager's ability to effectively manage recreation. The trends dealing with specific activities listed below focus on projected future participation levels. Following are several key trends related to participation levels that may influence future water recreation management and demand.

Urban Recreation Activities

As society becomes more urbanized, travel patterns (including length of stay, repeat visitation, and distance traveled) will be increasingly dependent on the quality of the recreation opportunities and the recreation settings provided (Tarrant, et al, 1999). Urban residents typically have fewer outdoor recreation opportunities than rural residents, which results in increased demand for outdoor recreation opportunities and activities closer to urban areas.

Recreation Activity Trends

Recreation use patterns continue to evolve. Basic recreation activities are generally constant, but trends occur within the activity. In boating, there are two trends where large craft are increasing faster than small craft, and participation in non-motorized boating is increasing at a faster rate than motorized. Other trends involve the provision of high-end camping, recreation-oriented urban redevelopment and development centers, and increased interest in rural communities (Delta Protection Commission, 2012).

Recreation Market Trends

Markets for outdoor activities are changing as new forms of participation are discovered, as the back grounds, perspectives, and tastes of recreationists change, and as constraints and opportunities shift. In that these changes are in part determined by the opportunities that are available, public land management policies will be under increased scrutiny to determine how well they meet the needs of Americans across all social strata, while at the same time providing private section business opportunities (Cordell et al, 1999).

Boat Ownership

While total boat ownership is continuing to increase significantly, boat ownership per capita is declining, and major shifts in boat sizes are underway (California Department of Boating and Waterways, 2002).

Boat Size

The vast majority of boats are under 16 feet in length. Recent trends show little growth in the number of small outboard boats, and little growth in the number of small cruisers, the two types of boats for which most existing boating facilities were designed due to their popularity in the 1960s, 70s, and 80s (California Department of Boating and Waterways, 2002).

Trail, Street, and Road Activities

Activities occurring on trails, streets, and roads continue to be popular. Walking, hiking, running, jogging, and bicycling outdoors can be done in a rural setting, but are most often done in an urban environment (Cordell, et al, 1999).

Water-Based Recreation Activities

Projections for many water-based activities, such as visiting beaches or water areas, canoeing, motorboating, non-pool swimming, and rafting, show increases over projected population growth through the year 2050 (Bowker, et al. 1999).

Water-Based Facilities

A proliferation since 1990 of personal watercraft, and strong growth in numbers of larger trailer-based boats and cruising boats, are stressing the capacity of some waterways and boating facilities (California Department of Boating and Waterways, 2002).

Consumptive Wildlife-Related Activities

Hunting is expected to decline in popularity from 19 million to 16.5 million participants over the next 50 years. A five year comparison of estimates from 2006 to 2011 shows an overall 3 percent increase in the total number of people participating in fishing. Even though the five year trend for hunting shows an increase of 1 percent, this short-term trend cannot be considered a significant one[8] (U.S. Fish and Wildlife Service, 2011).

Non-consumptive Wildlife Activities

Non-consumptive wildlife activities, such as birdwatching, photography, and other types of wildlife viewing, are projected to increase more than the population growth through the year 2050. The largest factor contributing to the projected increase is likely the increasing age of the general population. However, participation in wildlife-watching from 2006 to 2011 decreased slightly by 1 percent (U.S. Fish and Wildlife Service, 2011). Again, this short-term trend cannot be considered significant.

Developed Land Activities

Developed land activities, such as camping, family gatherings, visiting historical places, and walking, are expected to increase at a rate greater than population growth through 2050 for all regions of the United States (Bowker, et al. 1999).

Demographic Factors

Recreation research shows that demographic factors, such as age, race or ethnicity, gender, wealth or income, education, and previous experience, influence recreation behavior. The largest change expected in factors influencing recreation behavior relates to increases in population and real income. Population, age, and gender ratio are expected to change relatively little, whereas the percentage of whites in the population should decline as other racial groups grow at faster rates (Hof et al, 1983).

2.2 Quantitative Assessment

This section reports on the quantitative (data) information deemed important in recommending the necessary and appropriate facilities and services at Lake Berryessa. The information and data includes recreation activity participation levels, demographics, and population on a national, California and local level (i.e., market area). It is necessary to document and understand how existing and projected recreation-related participation level trends, demographics, and population can influence future demand. A lack of understanding of these

[8] Statistical comparisons are made at the 5-percent level. This means that for 95 percent of all possible samples, the estimate for 2006 cannot be shown to be different from the estimate in 2011.

factors can limit one's ability to market and manage recreation, associated programs, and resources effectively.

Since a majority of the visitors to Lake Berryessa reside in the local area, emphasis is given to the demographic and population data for the 25 counties within the market area. It is also important to understand how visitors in the market area feel about the facilities and services at Lake Berryessa, their reasons why they may or may not visit, as well has how the projected population visitor base and income level of market area residents can support recreation developments.

2.2.1 National Recreation Participation Levels, Demographics, and Population

The national recreation-related information contained in this section was obtained from a variety of sources such as the National Survey on Recreation and the Environment (NSRE)[9], 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation[10], Outdoor Foundation's® annual Outdoor Participation Report[11], and the 2009 State Comprehensive Outdoor Recreation Plan (SCORP)[12].

One should keep in mind that the number of participants in a specific recreation activity may increase over a specified period of time due simply to an increase in the total population. However, the percent of people participating in certain activities may have increased substantially beyond what an increase in the total population would account for. The percent change in participation levels from one period to another is the best trend indicator to consider.

National Recreation Participation Levels

Table 2-1 lists 22 outdoor recreation activities and the percent of the United States population that participated in those activities. The listed activities were selected because they are likely to occur at Lake Berryessa. The information covers the years 1999 to 2009. Percentage changes were calculated before rounding. As the table indicates, the fastest growing outdoor recreation activities by the percent change in participation from 1999 to 2009 were kayaking (103.8%), waterskiing (33.1%), viewing wildflowers/trees (29.4%), viewing and photographing wildlife other than birds (25.4%), viewing and photographing birds (22.8%), visiting a beach (20.7%), canoeing (18.2%), viewing natural scenery (17.9%), warm water fishing (17.1%), and day hiking (15.4%).

[9] The NSRE is a nation-wide survey of outdoor recreation activities conducted by the U.S. Forest Service (USFS) research group in Athens, Georgia. The NSRE series was begun in 1960 by the congressionally-created Outdoor Recreation Resources Review Commission. The most recent rounds of comprehensive surveys were conducted between the summer of 2005 and the spring of 2008 as part of the long-term data collection that began in 1999.

[10] This report is produced by the U.S. Fish and Wildlife Service approximately every five years to identify existing participation levels of wildlife associated recreation activities and associated economic impacts.

[11] This annual report in its 7th year of publication provides, among other things, participation levels for a variety of outdoor recreation activities in the United States.

[12] This report is a California statewide recreation planning document that reflects the current and projected changes in California's population, trends, and economy. It is required of every state in order to be eligible for grants from the Land and Water Conservation Fund Act.

Moderate increases in participation occurred for the activities of swimming in lakes and streams (14.0%), walking for pleasure (13.9%), sightseeing (13.7%), boat tours/excursions (13.1%), driving for pleasure (11.6%), snorkeling (11.8%), family gatherings (10.5%), and using personal watercraft (10.9%).

The activities that had the lowest increases in participation over the reporting period included motor boating (8.6%), bicycling (7.8%), picnicking (2.8%), and developed camping (1.1%).

Table 2-1. Popular Water-Based and Land-Based Recreation Activities that Might Occur at Lake Berryessa and the Percent of U.S. Population that Participates in those Activities

Activity	Total U.S. participants (millions) 1999–2001	Total U.S. participants (millions) 2005–2009	Percent of population participation 2005-2009	Percent change in participants 1999–2001 to 2005–2009
Walking for pleasure	175.6	200.0	85	13.9
Family gathering	157.6	174.2	74	10.5
Viewing natural scenery	127.1	149.8	63.7	17.9
Picnicking	118.3	121.6	51.7	2.8
Sightseeing	109.0	123.9	52.7	13.7
Driving for pleasure	107.9	120.5	51.2	11.6
Viewing/photographing wildlife other than birds	94.2	118.1	50.2	25.4
Viewing wildflowers and trees	93.8	121.3	51.6	29.4
Visiting a beach	84.4	102.0	43.3	20.7
Swimming in lakes, streams, etc.	85.5	97.5	41.5	14.0
Bicycling	81.9	88.3	37.5	7.8
Viewing/photographing birds	68.5	84.1	35.7	22.8
Day hiking	69.1	79.7	33.9	15.4
Developed camping	55.3	56.0	23.8	1.1
Motor boating	50.7	55.0	23.4	8.6
Warmwater fishing	47.6	55.7	23.7	17.1
Boat tours or excursions	40.8	46.1	19.6	13.1
Canoeing	19.3	22.8	9.7	18.2
Using personal watercraft	19.1	21.1	9.0	10.9
Waterskiing	16.0	21.3	9.0	33.1
Snorkeling	13.6	15.2	6.5	11.8
Kayaking	7.0	14.2	6.0	103.8

Source: Cordell, 2010

A recent survey report compared 2005-2009 participation information with 2010-2011 levels for several activities listed in Table 2-1. This information is provided to show that trends can fluctuate from year-to-year and may be caused by a variety of factors (e.g., bad weather patterns, poor economy). These minor year-to-year fluctuations in participation levels do not indicate a trend in either direction and should not be used to make major management or development decisions. The results of that survey found that the participation levels for activities such as walking for pleasure and family gatherings were essentially the same while participation levels had grown the fastest for sightseeing (+8.1%), viewing birds (+5.7%), and swimming activities (+4.8%), viewing or photographing other wildlife beside birds (+3.9%), boating (+2.7%), and fishing (+0.8%). Four activities appear to have decreased between 2005-2009 and 2010-2011. They include picnicking (-4%), bicycling (-1.9%), developed camping (-2.1%), and primitive camping (-1.8%) (Cordell, 2012).

According to the 2011 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreat*ion, over 90 million United States residents 16 years of age or older participated in wildlife related activities. Those activities include fishing, hunting, or a wildlife-watching activity including observing, feeding, or photographing fish and other wildlife in the United States (U.S. Fish and Wildlife Service, 2011).

A *2013 Outdoor Participation Report* found that 49.5 percent of all Americans participated in some form of outdoor recreation in 2012. Although the overall participation rate remained about the same as it was in 2011, the number of participants is the highest recorded since 2006, primarily because of population growth. Nearly 142 million people enjoyed outdoor recreation, up about 800,000 since 2011 (Outdoor Foundation®, 2013).

Camping is one of the most popular outdoor recreation activities in the United States. Camping can occur in a variety of settings from developed RV campsites with full hookups, to undeveloped hike-in and boat-in sites, to back country wilderness areas. Camping participants averaged 14 camping days per year for a total of 592 million days. Over three quarters of camping participants participate in multiple outdoor activities. For this reason camping can be considered a gateway to the outdoors. Some of the important findings of a special report on camping (Outdoor Foundation®, 2009) identified that:

- The most popular activities participated in by campers that were considered backyard and/or car campers were hiking (53.7%), swimming (47.8%), bicycling (19.8%), birdwatching (18.8%), running (15.2%), canoeing (12.6%), and kayaking (4.7%).

- Campers that were RV campers participated in the same above-mentioned activities at the following rates: hiking (41.8%), swimming (51%), bicycling (27.5%), birdwatching (15%), running (11.5%), canoeing (14.2%), and kayaking (7.4%).

- RV campers preferred staying at the following places at the following rates: public campgrounds (69.6%), private campgrounds (50.7%), backyard (12.4%), and at special events (9.5%). Car and backyard campers[13] preferred staying at public campgrounds (72%), private campgrounds (29.3%), and at special events (6.2%).

Although fishing is not one of the 10 most popular recreation activities in the United States or an activity that is reported in Table 2-1, it is still a very popular activity occurring throughout the United States. In 2011, 46 million Americans went fishing. That equates to 16.2 percent of the population, a slight increase from 16 percent in 2010 (Recreational Boating and Fishing Foundation® and Outdoor Foundation®, 2012). Key finding of this report concluded that:

- A majority of fishing participants (84.3%) participate in multiple outdoor activities.

- Most anglers fished from a boat (50.1%), shoreline (49.2%), and river bank (41.4%).

- A majority of fishing participants participate in just one type of fishing (80%).

- Fishing gained more participants than it lost in 2011 (i.e., 8 million anglers stopped fishing but the sport gained 8.8 million participants). This is a significant improvement over 2010 when the sport lost 2.5 million participants.

Although stand up paddling, boardsailing/windsurfing are not mentioned in Table 2-1, these recreation activities had the highest percentage of first time participants in 2012 (Outdoor Foundation®, 2013).

During 2011, the United States Coast Guard conducted a national survey on boating and published a report titled *National Recreational Boating Survey*. The report focuses on overall boating participation, boat ownership, types of boats used, and the amount of time that boats are used for the different regions of the United States. Refer to the national and State of California population and demographic section below for boater demographics. Following are some of the most important findings of the 2011 report:

- Approximately 73.6 million Americans participated in recreation boating in 2011. This represents 23.8 percent of the population. Of the 73.6 million people who boated in 2011, about half (51.1%) did so at least once on a power boat followed by row/inflatable boat (27.7%), kayak (25.3%), canoe (23.9%), pontoon (20.8%), personal water craft (PWC) (16.8%), and sailboat (10.6%).

[13] For the purposes of this report “backyard campers” can be broadly defined as those individuals who camp within a reasonable distance from their home (i.e., local community).

- In 2011 and based on 2010 census, there were 116,716,000 households in the United States. Of that 34,201,000 households participated in recreational boating (29% of households).

- Of those who participated in boating activities, 14.6 percent fished from a boat while 11.6 percent canoed or kayaked.

- Of the 116.7 million households in the United States, 17 percent owned one or more recreational boats for a total of approximately 22.2 million boats.

- The most popular boating activities across the United States and the participation rates in 2011 were socializing (75.3%), cruising (70.3%), sightseeing (66.7%), fishing or crabbing (46.7%), and swimming and diving (46.7%).

- Of the 73.6 million recreation boaters in the United States, the activity participation percentage rate while on the water was 23.8 percent while 6.8 percent enjoyed certain activities while the boat was docked (e.g., individuals that owned houseboat/pontoon boats enjoyed time on their boat but did not leave the marina area).

Hispanic Recreation Participation Levels

Hispanics are the largest and fastest growing minority group in the United States and California. The Hispanic population in the United States will more than double, from 15.9 million in 2012 to 128.8 million in 2060 (U.S. Census Bureau, 2013). As already stated, Hispanics will comprise nearly half (48%) of the total California population by 2060. Their increasing participation in outdoor recreation will influence the demand for recreation facilities and services at Lake Berryessa.

Non-Hispanics are still more prominent as outdoor recreation participants; however, recent NSRE surveys indicate that non-Hispanic Whites are more active in viewing and photographing nature, sightseeing, and boating. The Hispanic portion of the United States population is more active in visiting beaches, historic and prehistoric sites, farm settings, and bicycling. Refer to Table 2-2 for a list of recreation activities favored most by non-Hispanics and Hispanics.

Table 2-2. Percentage of Hispanic and Non-Hispanic U.S. Residents Age 16 and Older Participating in Selected Outdoor Recreation Activities, 2008-2011

Activity	Non-Hispanic	Hispanic
Visiting a beach	48.1	54.6
Visiting a farm setting	35.4	38.8
Viewing/photographing scenery	67.8	59.3
Rafting	9.4	8.3
Visiting prehistoric sites	20.3	28.8
Sightseeing	56.0	50.4
Driving for pleasure	52.8	49.0
Viewing/photographing wildlife other than birds	53.6	47.4
Day hiking	35.1	33.5
Bicycling	35.0	42.3
Visiting historical sites	45.8	50.5
Fishing	35.6	33.9
Warmwater fishing	27.2	22.4
Viewing/photographing birds	40.1	29.9
Mountain biking	17.5	21.2
Swimming lakes, ponds, etc.	45.0	52.3
Motor boating	25.9	16.7
Kayaking	7.6	6.3

Source: Cordell, 2012.

National Population and Demographics

According to the U.S. Census Bureau, the estimated 2012 population of the United States was 313,914,040, up 1.7 percent from a population of 308,745,538 in 2010. The racial makeup of the population in 2012 consisted of Whites or European Americans (78.1%), Hispanic (16.7%), Black or African American (13.1%), Asian (5.0%), and others (3.7%). The Hispanic population is the fastest growing racial group in the United States. Most reports predict that the Hispanic population will make up to approximately 30 percent of the total population of the United States in 2050 (U.S. Census Bureau, 2010).

Persons under 5 years of age made up 6.5 percent of the United States population; persons under the age of 18 made up 23.7 percent of the population; and persons over 65 years of age made up 13.3 percent of the population. Females made up 50.8 percent of the population; males 49.2 percent.

The population of the United States is projected to be 333,896,000 in 2020; 358,471,000 in 2030; 380,016,000 in 2040; and 399,803,000 in 2050; it is expected to surpass 401 million by the end of 2050 (U.S. Census, 2010).

In 2012, 70 percent of the outdoor participants were Caucasian; 49 percent were married; and 50 percent were self-employed or work full or part time while six percent were unemployed. Participation among children and young adults remained steady, participation among adolescents dropped due to low participation by adolescent girls (Outdoor Foundation®, 2013).

A 2009 special report prepared by the Outdoor Foundation® on camping found that camping varies by age and that participation over time suggests a life cycle of participation that is similar to the life cycles of other outdoor activities (i.e., youth participation is initially high, declines sharply in adolescence and young adulthood, but recovers slightly among adults age 25 to 44. Additionally, 24.7 percent of the camping participants have incomes between $50,000 and $75,000; 25.7 percent are ages 17 or younger, 14.9 percent are ages 6 to 12, and 18.9 percent live in Oregon, Washington, and California, the highest percent of any U.S. Census region.

A 2012 fishing and boating report prepared by the Recreational Boating and Fishing Foundation® and Outdoor Foundation®, found that:

- Anglers were 66.3 percent male and 33.7 percent females.
- Ages of anglers ranged from over 45 years of age (36.1%) to those anglers 6 to 12 years of age (13.6%).
- Income levels of anglers ranged from those that made over $100,000 per year (25.8%) to those individuals who made less than $25,000 (13.7%).
- Education levels ranged from anglers who obtained 1 to 3 years of college (24.9%) to those anglers that completed 1 to 3 years of high school or less (24.2%).
- The ethnicity of anglers was Caucasian (81%), followed by African American (5.5%), Hispanic (5.4%), and Asian (3.7%).
- While Hispanics make up only 12 percent of United States fishing participants, those Hispanics that do fish make the most annual fishing trips than any other group. This indicates that fishing has a huge appeal and potential for this ethnic group**.**

The 2011 U.S. Coast Guard national boating report found that:

- According to the 2010 U.S. Census Bureau, there were approximately 58.3 million adult individuals over the age of 16 who participated in recreational boating in 2011. This represents 23.6 percent of the total United States adult population.

- Of the 58.3 million boaters aged 16 years of age or older, 23.1 percent participated in activities while the boat was on the water while 6.1 percent enjoyed activities while the boat was docked.

- According to the 2010 U.S. Census, there were approximately 15.2 million children (i.e., less than 16 years of age) who participated in recreational boating in 2011. This represents 24.7 percent of the total United States population of 61.7 million children.

- About 44.3 percent of all boating participants across the United States were female.

- Overall, 20.3 percent of adult females and 27.1 percent of females of all ages participated in boating while 27.1 percent of adult males and 27 percent of males of all ages across the United States participated in boating in 2011.

2.2.2 California Recreation Participation Levels, Demographics and Population

The State of California has done extensive study of its population and outdoor recreation participants over the past several decades. The number of reports and volume of data is noteworthy. This section reports on some of the key highlights likely to affect participation and the demand for recreation services and facilities at Lake Berryessa.

California Recreation Participation Levels

Table 2-3 reports on the participation levels (percentage of adult population) of the top 15 most popular recreation activities in California.

Table 2-3. California's Top 15 Recreation Activities by Participation in 2009

California's Top 15 Recreation Activities by Participation	Participation Percentage
Walking for fitness or pleasure	74.2
Driving for pleasure, sightseeing, driving through natural scenery	59.8
Beach activities	59.2
Swimming in a pool	50.9
Day hiking on trails	46.9
Wildlife viewing, bird watching, viewing natural scenery	45.9
Jogging and running for exercise	39.8
Bicycling on paved surfaces	36.3
Outdoor photography	33.3
Using open turf areas	33.3
Using play equipment, play structures, tot-lots	32.8
Organized team sports such as soccer, football, baseball, softball, basketball	25.6
Fishing – freshwater	21.4

Table 2-3. California's Top 15 Recreation Activities by Participation in 2009

California's Top 15 Recreation Activities by Participation	Participation Percentage
Bicycling on unpaved surfaces and trails	15.9
Surfing or boogie boarding, windsurfing	14.1

Source: California Department of Parks and Recreation, 2009 – 2013

A State of California public survey completed in 2007 identified a public need and/or demand and preference for 15 outdoor recreation activities. As a result of the *Public Opinions and Attitudes on Outdoor Recreation in California* survey, the state will give priority funding and development to those projects that provide opportunities to participate in the following 15 activities (California Department of Parks and Recreation, 2008):

- Walking for pleasure
- Camping in developed sites
- Bicycling on paved surfaces
- Day hiking on trails
- Picnicking in picnic areas
- Beach activities
- Visiting outdoor nature museums, zoos, gardens or arboretums
- Visiting historic or cultural sites
- Attending outdoor cultural events
- Off-highway vehicle use
- Driving for pleasure, sightseeing, driving through natural scenery
- Swimming in a pool
- Wildlife viewing, bird watching, viewing natural scenery
- Outdoor photography
- Swimming in freshwater lakes, rivers and/or streams

According to the 2011 *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*, the Pacific Region consists of the States of California, Nevada, Oregon, Washington, Hawaii, and Alaska. The participation rate for fishing in the United States is 16.2 percent. The participation rates for fishing ranged from a low of 9 percent in the Pacific Region to a high of 23 percent in the West North Central that includes the States of North Dakota, South Dakota, Minnesota, Nebraska, Kansas, Missouri, and Iowa.

The national participation rate for participating in wildlife-watching activities is 29 percent. The participation rates ranged from a low of 24 percent in the Pacific Region to a high of 35 percent in the East North Central that includes the States of Wisconsin, Michigan, Illinois, Indiana, and Ohio.

The national participation rate for hunting is 6 percent. The regional participation rates ranged from a low of 3 percent for the Pacific Region to a high of 11 percent in the East South Central that includes the States of Mississippi, Alabama, Tennessee, and Kentucky.

Even though hunting is prohibited at Lake Berryessa, it is mentioned here to show that the Pacific Northwest lags behind the rest of the United States in participating in all types of wildlife associated recreation. However, as documented in the 2007 State of California survey, viewing wildlife in the outdoors is an important outdoor recreation activity for California residents.

The states of California, Washington, and Oregon (U.S. Census Pacific Region) ranks fourth among other regions of the United States in the number of the total fishing participants (11.8% of the total United States' fishing population) (Recreational Boating and Fishing Foundation® and Outdoor Foundation®, 2012).

A California state-wide examination of boating habits, environmental awareness and overall outreach and educational program was conducted from 2007 – 2009 (California Department of Boating and Waterways, 2011). Some important findings from that report were relevant in determining the types of marina components that might be provided at Lake Berryessa. Some of the percentages do not equal 100% because not all categories are provided for each item in the respective bullets below. The important findings of the final report published in 2011 are:

- A majority of the boaters surveyed owned boats 20 – 25 feet in length (30%), 26 – 39 feet (29%), 16 – 19 feet (19.8%), 40 – 65 (10.5%), less than 16 feet (9.4%), and more than 65 feet (0.6%).

- The largest proportion of boaters surveyed owned a ski boat (30%), fishing boat (20.8%), sailboat with an auxiliary motor (19.9%), motor yacht (11.2%), cuddy cabin/cruiser (10.8%), sailboat without auxiliary motor (4.9%), personal watercraft (4.4%), and houseboat (2.4%).

- Almost half (47.2%) of boaters surveyed stored their boats at home on a trailers followed by marina in-water berths (34.2%), and marina dry storage (6.4%).

- Boat owners typically launch their boats from a public launch ramp (40.5%) or marina (28.1%).

- The most common reason boaters cited for their choice of launch location was easy access (28.8%) followed by close proximity to where they stored their boat (25.0%), convenient trailer parking (18.7%), fuel dock (4.8%), restaurant (4.7%), and sewage pump-out station (2.8%).

- About 45% of the boaters used their boats on in-land lakes at least once a year followed by ocean (42.7%), Sacramento-San Joaquin Delta (26.8%), and San Francisco Bay (16.9%).

- About half of the boaters (49.6%) fueled their boats at a gas station before they launched, followed by marina (37.2%), and brought their own gas (13.2%).

California Population and Demographics

According to the U.S. Census Bureau, the estimated 2012 population of California was 38,041,956 which was an increase of 2.1 percent from a population of 37,253,956 in April 2010. This increase was slightly higher than the national average increase of 1.7 percent. The racial makeup of California's population in 2012 was White alone (73.7%), Hispanic or Latino (38.2%), Asian alone (13.9%), two or more races (3.6%), Black or African American alone (6.6%), American Indian and Alaska Native alone (1.7%), and Native Hawaiian and other Pacific Islander alone (0.5%) (U.S. Census Bureau, 2010).

The latest projections indicate that early in 2014, the Hispanic population will become a plurality in California for the first time since it became a state. By 2060, both the Black and the White populations will have increased in size, but decreased in proportion to the total population. Hispanics will comprise nearly half (48%) of total California population. Asians will grow significantly in population, but only marginally relative to the total (California Department of Finance, 2013).

Persons under 5 years of age made up 5.8 percent of the population; persons under 18 years of age made up 22.5 percent of the population; and persons 65 years and over made up 16 percent of the population. Females made up 50.1 percent of the population; males 49.9 percent (U.S. Census Bureau, 2010).

For 2012, the San Francisco Bay Area was the fastest growing region in the state and includes four of the five fastest growing counties. Santa Clara County is the fastest growing county in the state (1.6%), while Alameda, San Mateo, and San Francisco County all had population growth rates over one percent (California Department of Finance, 2013).

However, many Californians are moving inland, away from high-cost, high-density coastal counties. The Sierra foothills are projected to have the highest percentage of growth in the state. The State of California's Central Valley's population is projected to nearly double, from 7.8 million in 2000 to 14 million in 2030. The Central Valley makes up 19 percent of California's land base but only contains 4 percent of the State's projected public lands (California Department of Parks and Outdoor Recreation, 2009). **Note**: Lake Berryessa lies just outside what is considered by the state as the western boundary of the Central Valley. The State of California has identified the Central Valley as an underserved region for parks and outdoor recreation and has set a priority to provide or improve the outdoor recreation opportunities for this geographic area.

California is already culturally and racially diverse, with significant proportions of the United States total for various racial and ethnic groups (e.g., 36.1 percent of the nation’s total Asian American population; 31.1 percent of the nation’s Hispanic population). By 2030, 43 percent of the state’s population is projected to be Hispanic (52 percent by 2050, projected by the California Department of Finance). Between 2000 and 2020, the state should see a 58 percent increase in Hispanics, a 55 percent increase in Asian/Pacific Islanders, a 29 percent increase in Native Americans, a 20 percent increase in African Americans, and a 4 percent increase in people of European descent. California has more foreign-born residents than any other state, and many of them are recent (since 1990). Many recent immigrants have limited outdoor recreation experience on public lands (United States Forest Service, 2012).

A 2009-2010 State of California alternative camping survey documented the demographics of visitors who stayed in cabins, yurts, cottages and on floating campsites. The visitor demographics of people that stayed at these camping units were comprised of experienced campers (53.3%) or occasional campers (37.2%); White Caucasian (82.8%); incomes of over $75,000 (73.1%); primarily Californians (94.5%); and campers that were between 45 and 54 years of age (34.4%) and 35 to 44 years of age (29.9%) (California Department of Parks and Recreation, 2011). Refer to Section 2.2.4 for a discussion of alternative camping options.

2.2.3 Local Recreation Participation Levels, Demographics, and Population

The recreation participation levels for the local area is presented in the form of preferred recreation activities, preferred type of camping, preferred characteristics, preferred site attributes for Lake Berryessa that were identified in a 1997 Chico University Market Survey. For the purposes of this report it is assumed that participation rates for the remainder of the market area mirrors the California levels. Specifically, refer to Table 2-3 for participation levels for the 15 most popular recreation activities for California. A brief discussion of the state boating registration numbers is provided that suggests a level of demand within the market area. The population and demographic information provided in this section focuses on the 25 counties within the market area.

Chico State University Market Survey

The primary participation information provided in this section has been excerpted from a Lake Berryessa Market Survey that was prepared by Chico State University in 1997. The survey identified the: (1) water-based recreation participation patterns of people living within 100 miles or a two hour drive from Lake Berryessa, (2) how recreation users evaluated their favorite water-based outdoor recreation location, (3) why potential visitors did not visit Lake Berryessa, and (4) things that are important to visitors when visiting water recreation areas. The market area for this study included the 16 following counties: Alameda, Colusa, Contra Costa, Lake, Marin, Mendocino, Napa, Sacramento, San Francisco, San Joaquin, San Mateo, Solano, Sonoma, Sutter, Yolo and Yuba.

Although the survey is somewhat dated, it was felt that the results of the survey were of value in preparing the Market Assessment final recommendations. As with the 2002 DBW Boating and Facilities Needs Assessment, the survey was conducted when there were seven concession areas, 1,500 private exclusive use trailers at the lake, and a very limited number of traditional recreation facilities available to the public. Therefore, paying strict attention to the survey results may provide some insight as to the types and quantities of facilities and services that should be constructed at Lake Berryessa and that match the demands, desires and expectations of potential visitors.

Following are the summarized key findings of the 1997 market survey (Fletcher, 1997).

- Of the 57.5 percent of the visitors who had visited Lake Berryessa within the last five years, 35.2 percent planned on visiting within the next two years.

- For the individuals who had participated in certain outdoor recreation activities in the previous 12 months and who would participate in a particular activity in the next two years, would do so at the following percentage rates: boat when camping (56.8%), off-road – motorized (54.5%), horseback riding (45%), fishing (44.4%), swimming – not home pool (44.2%), camping (42.6%), tennis/golf/volleyball (38.8%), boating – non fish (38.3%), hiking/backpacking (38.1%), mountain/road biking (37.3%), picnicking (37%), beach activities (35.6%), and nature activities (34.4%).

- Of the 72 individuals surveyed who participated in boating activities other than boat fishing within the previous 12 months, most of the respondents participated in the following non fishing boating activities: skiing (27 respondents), kayaking/rowing (16 respondents), jet/wave running (16 respondents), power (6 respondents), and house/pontoon (3 respondents). The percentage of those individuals who would plan to travel to Lake Berryessa to participate in those activities is: 50 percent for skiing; 30.2 percent for kayaking/rowing; 59.3 percent for jet/wave running; 26.1 percent for power boating; and 50 percent for house/pontoon boating.

- Of the 241 respondents who had camped at Lake Berryessa, 80 respondents (71%) had tent camped and 46.8 percent stated that they would return within the next two years.

- The average length of stay for all types of camping is 3 days or less.

- Respondents rated the importance of the several campsite characteristics. The most important characteristics are near water (52%), near restrooms (44.3%), flush toilets (38.5%), waste dump stations (33.9%), hot showers (33.2%), and full hookups (33.3 percent).

- Of 375 respondents who have participated in outdoor recreation near water in the previous 12 months and have been to Lake Berryessa sometime during their lives, 136 respondents (36.3%) plan on making return trips. Recreationist who made 15 to 24 trips and 25 and above represent 39.7% of the 136 respondents.

- Of 371 respondents, 41 (9.7%) would make a return trip of one day trip to Lake Berryessa within two years; 34 (40%) would make a two day trip; 36 (42.9%) would make a 3 day trip; 15 (53.3%) would make a 4 day trip; and 9 (25%) would make a 5 day trip.

- Of 491 respondents who have visited Lake Berryessa sometime during their lives, 369 of the 491 respondents resided in the San Francisco Bay Area. This is 75.2% of the total number of respondents surveyed. San Francisco Bay Area is followed by Sacramento at 19.1 percent (i.e., 94 respondents of 491).

- If respondents had an opportunity to plan for a recreation visit on or near water, they ranked the following as very important for their trip: Enforcement of laws and regulations (78.9%), maintenance of facilities (75.2%), picnic areas (64%), security patrols (61.4%), hiking and biking trails with no vehicles allowed (55.1%). The least important items were: dry boat storage (63.6%), bar or tavern (59.9%), facilities for dirt bikes and off-road vehicles (57%), and equipment rentals and lessons (jet skis, etc.) (51.2%).

Registered Boating Vessels

Another way to assess potential recreation demand is through an evaluation of state boating registration numbers. Vessels propelled solely by oars or paddles (e.g., canoes, kayaks) do have to be registered. The following numbers represent actual numbers, as opposed to estimates of participation rates. This can help in predicting potential demand. There were 820,490 boats registered in the State of California in 2013. There were 324,224 registered boats in the 25 selected counties within the market area. This represents 60.4 percent of the total number of boats registered in the state. The top five counties in the market area with the highest number of registered boats were Sacramento County with 41,528, followed by Contra Costa (32,536), San Joaquin (24,386), Santa Clara (23,147) and Alameda (22,311) (California Department of Boating and Waterways, 2013). The county with the least number of registered boaters was Colusa with 1,461 registered boats.

Local Population and Demographics

For the purposes of this section of the Market Assessment, the local area consists of the 25 selected counties within the market area as described in the introductory paragraph to this chapter. **Note**: The counties that are addressed in this section include the 9 counties included the 1997 Market Assessment Survey conducted by Chico State University Market Survey as noted previously. Special emphasis is given to the Bay Area counties and the visitor profile of tourists that visit Napa Valley. It is important to understand the significance of the demographic profile of the residents within the market area as well as the tourists that visit the Bay Area and Napa Valley specifically.

The racial make-up of the residents that reside in the 25 county market area are presented in Table 2-4. The racial make-up of Bay Area residents are collectively shown because of their visitation history and their importance to the success of any future recreation developments at Lake Berryessa. The average racial make-up of all the counties in the market area is: White (58.2%), Hispanic (24.9%), Black or African American (3.0%), American Indian and Alaska Native (2.3%), Asian (7.2%), Native Hawaii and other Pacific Islander (0.4%), and two or more races (3.9%)

Table 2-4. Ethnicity[1] of Population within the Selected 25 Counties in the Market Area

County	Percent White	Percent Hispanic	Percent Black or African American	Percent American Indian & Alaska Native	Percent Asian	Percent Native Hawaiian and other Pacific Islander	Percent Two or more races
9 Bay Area Counties Average	42.4	23.5	6.4	0.3	23.0	0.6	3.8
Amador	78.2	12.7	2.3	2.1	1.2	0.2	3.2
Butte	72.2	14.8	1.7	2.4	4.4	0.3	4.1
Calaveras	81.4	10.8	1.0	1.8	1.4	0.2	3.4
Colusa	35.2	56.6	1.2	2.6	1.7	0.6	2.2
El Dorado	78.2	12.2	0.9	1.3	3.8	0.2	3.4
Glenn	51.5	38.7	1.1	3.0	2.9	0.2	2.7
Lake	70.1	18.0	2.0	4.1	1.3	0.2	4.3
Mendocino	63.9	23.0	0.9	6.3	1.9	0.2	3.8
Nevada	85.1	8.9	0.5	1.2	1.3	0.1	2.9
Placer	73.7	13.3	1.6	1.1	6.5	0.3	3.8
Sacramento	43.3	22.0	10.9	1.6	15.3	1.2	5.8
San Joaquin	28.7	39.7	8.2	2.0	15.7	0.7	5.0
Stanislaus	41.4	43.0	3.2	1.9	5.7	0.9	3.8
Sutter	45.4	29.3	2.4	2.3	16.1	0.4	4.1

Table 2-4. Ethnicity[1] of Population within the Selected 25 Counties in the Market Area

County	Percent White	Percent Hispanic	Percent Black or African American	Percent American Indian & Alaska Native	Percent Asian	Percent Native Hawaiian and other Pacific Islander	Percent Two or more races
Yolo	45.2	31.0	3.0	1.8	13.6	0.6	4.8
Yuba	53.5	26.2	3.8	3.0	7.2	0.5	5.9
Average	58.2	24.9	3.0	2.3	7.2	0.4	3.9

Source: Association of Bay Area Governments/Metropolitan Transportation Commission, 2000-2010 and U.S. Census Bureau, 2013.

[1] The percentages do not necessarily add up to 100 percent due to rounding.

Table 2-5 provides additional demographic information to that provided in Table 2-4. The information provided in both tables provides an adequate profile of the potential visitors to Lake Berryessa as well as Napa Valley. The top five counties with the highest median household incomes are Santa Clara with $90,747 annually, followed by Marin ($89,605), San Mateo ($87,751), Contra Costa ($78,187), and Placer ($73,356). The first four counties listed reside within the Bay Area. The demographic information can be used by Reclamation, Napa County, and potential Lake Berryessa concessionaires in marketing the many recreation opportunities at Lake Berryessa to potential visitors. The development of high quality recreation facilities and services at Lake Berryessa could potentially increase the visitor base to include wealthier individuals from the Bay Area and the tourists who visit Napa Valley. Marketing to those individuals with a higher than normal annual household income could help sustain the financial viability of existing and future recreation developments at Lake Berryessa.

The county with the youngest residents is Yuba at 30.4 years of age. The county with the oldest residents is Lake at 45 years of age. Colusa County is the least densely populated county at 19 people per square mile while San Francisco County is the most densely populated county at 17,179 people per square mile (California Department of Finance, 2013). With 1,149.8 persons per square mile, the market area is more densely populated than the national and State of California averages. The average household income of all 25 counties together is $61,537 which is higher than the national median incomes of $52,762 but slightly lower than the $61,632 for the entire State of California. The gender make up is 49.7 percent male and 50.3 female while the market area median age of 38.7 is somewhat older than the national and State of California averages of 35.8 and 35.2 respectively.

Table 2-5. 2010 Demographic Information for the Selected 25 Counties within the Market Area

Location	Median Household Income	Median Age	Percent Male	Percent Female	Persons per square mile
National	$52,762	35.8	49.2	50.8	87.4
State of California	$61,632	35.2	49.7	50.3	239
California counties within market area					
Alameda	$71,516	36.2	49.0	51.0	2,044
Amador	$53,462	48.2	54.4	45.5	64.1
Butte	$43,339	37.2	49.5	50.5	134.4
Calaveras	$54,686	49.2	50.1	49.9	44.7
Colusa	$52,165	33.5	51.4	48.6	19
Contra Costa	$78,187	38.5	48.8	51.2	1,465
El Dorado	$70,117	43.6	50.0	50.0	106
Glenn	$42,641	35.3	50.5	49.5	21.4
Lake	$39,525	45.0	50.2	49.8	52
Marin	$89,605	44.5	49.2	50.8	485
Mendocino	$43,721	41.5	50.1	49.9	25
Napa	$68,641	39.7	49.9	50.1	182
Nevada	$57,382	47.6	49.4	50.6	103.1
Placer	$73,356	40.3	48.8	51.2	247.6
Sacramento	$56,553	34.8	49.0	51.0	1,471
San Francisco	$72,947	38.5	50.7	49.3	17,179
San Joaquin	$53,895	32.7	49.8	50.2	493
San Mateo	$87,751	39.3	49.2	50.8	1,602
Santa Clara	$90,747	36.2	50.2	49.8	1,381
Solano	$69,914	36.9	49.9	50.1	503
Sonoma	$63,343	39.9	49.2	50.8	307
Stanislaus	$49,866	32.9	49.5	50.5	344.2
Sutter	$50,510	34.5	49.6	50.4	157
Yolo	$57,920	30.4	48.8	51.2	198
Yuba	$46,641	32.1	50.4	49.6	114
Average	**$61,537**	**38.7**	**49.9**	**50.1**	**1,149.8**

Source: California Department of Finance, 2013 and U.S. Census Bureau, 2013.

Table 2-6 provides the changes in the population of the 25 counties within the market area at 10-year intervals from 2010 to 2050. The last column shows the percent increase for each county from 2010 to 2050. The 5 fastest growing counties within the market area from 2010 to 2050 are Sutter (124%), San

Joaquin (101%), Yuba (99%) and Colusa (71%), and Stanislaus (67%). The average population increase of all 25 counties together is 36% percent which is slightly higher than the projected population increase of 35 percent for the State of California for the same time period (California Department of Finance, 2013). The population increase for these inland counties supports the information documented by the State of California that Californians are moving inland, away from high-cost, high density coastal counties (California Department of Parks and Recreation, 2009).

Table 2-6. Population Projections for the 25 Selected Counties within the Market Area

County	2010	2020	2030	2040	2050	Projected Percent Increase 2010 – 2050[1]
Alameda	1,513,236	1,608,204	1,657,567	1,678,565	1,684,761	11
Amador	37,853	39,352	42,036	44,200	44,829	18
Butte	219,990	241,521	284,082	317,718	333,319	52
Calaveras	45,462	48,312	53,001	57,225	60,052	32
Colusa	21,478	24,886	29,023	33,273	36,757	71
Contra Costa	1,052,211	1,147,399	1,254,205	1,392,509	1,489,068	42
El Dorado	180,921	203,095	234,485	263,579	283,125	56
Glenn	28,143	30,780	33,552	36,027	38,020	35
Lake	64,599	71,228	84,394	97,884	105,715	64
Marin	252,731	251,361	253,026	259,549	264,810	5
Mendocino	87,924	91,498	94,812	98,112	99,863	14
Napa	136,811	145,660	158,649	172,927	185,238	35
Nevada	98,639	104,343	114,022	127,457	140,595	43
Placer	350,275	391,682	442,505	501,293	547,072	56
Sacramento	1,420,434	1,543,522	1,708,114	1,913,756	2,063,132	45
San Francisco	806,254	852,788	877,847	891,607	907,443	13
San Joaquin	686,588	810,845	1,004,147	1,213,708	1,379,333	101
San Mateo	719,729	747,563	803,288	850,112	895,603	24
Santa Clara	1,786,429	1,889,898	1,986,545	2,083,710	2,152,199	20
Solano	413,117	447,217	493,422	551,491	592,850	44
Sonoma	484,084	507,250	534,439	572,664	598,795	22
Stanislaus	515,205	589,156	674,859	759,027	861,984	67
Sutter	94,669	108,939	133,010	172,475	212,161	124
Yolo	201,311	223,657	250,414	281,259	297,147	48
Yuba	72,329	84,520	101,812	123,203	143,973	99
Totals	**11,290,422**	**12,204,676**	**13,303,256**	**14,493,330**	**15,407,844**	**36%**

Source: California Department of Finance, 2013.

[1] The percentage population growth for the total market area (25 counties) from 2010 to 2050 does not match the average percentage growth for each county because calculation methodologies are different. The average percentage calculated for each

individual county is biased upward by several counties that are projected to have significant population increases. The percentage of total population growth of the market area from 2010 to 2050 is calculated as one data point.

Napa Valley Visitor Demographics

The median household income and the ethnicity of visitors to Napa Valley are significantly different when compared to the overall demographics of the residents of the counties within the market area, as well as the rest of California and the nation. Visitors to Napa Valley are more affluent than the average resident within the market area. Approximately half of all survey respondents had annual household incomes above $100,000 (Visit Napa County, 2012).

Following are the key finding of a 2012 Napa Valley Visitor Profile study that surveyed visitors to Napa Valley:

- Approximately two-thirds of all Napa Valley visitors are white/Caucasian (65.4%), Asian/Pacific Islander (13.6%), prefer not to answer (8.2%), Hispanic/Latino (7.5%), Black/African American (2.5%), and other (2.8%).
- Day-trip visitors are more ethnically diverse when compared with visitors who stayed in a hotel/motel or overnight with friends or relatives.
- Typical lodging guests have an average annual income of $195,000; day-trip visitors having an annual income of $154,000; and visitors who stayed with family or friends have an annual income of $145,000.
- Over two-thirds of all Napa Valley visitors are 35 years or older (67.3%), including 29.4 percent who are over 55 years of age.
- The gender of visitors is 52.1 percent female, 42.7 percent male, and 5.2 percent did not identify themselves as male or female.

2.2.4 Alternative Camping Options

An alternative to traditional camping (i.e., tent and trailer camping) is to spend a camping vacation in a more permanent structure (i.e., cabin, park model[14], yurt, tent cabin or floating campsite). Refer to Figures 2-3, 2-4 and 2-5 for examples of a cabin,[15] yurt,[16] and tent cabin.[17] The State of California conducted a

[14] A park model is a unique trailer-type RV that is designed to provide accommodations for recreation, camping or seasonal use. It is built on a single chassis, mounted on wheels and has a gross trailer area not exceeding 400 square feet in the set-up mode. Although park models are easily moved, they should be located above elevation 455' due to the utilities that will be provided to each structure.

[15] A cabin is defined by Reclamation as an overnight or annual occupancy structure, either constructed on-site or prefabricated, set on a foundation or otherwise permanently placed. A cabin can be a rustic structure with little or no amenities or one that is fully furnished with utilities, furniture, refrigerator and microwave etc. It must be placed above 455' elevation at Lake Berryessa.

[16] A yurt is a portable living structure originally developed by the nomadic groups of the Central Asian steppes. Modern yurts and yurt derivatives are typically made from more contemporary materials (aluminum rivets, aircraft cable, and polyester materials) with heat-treated and fine finished wood. For the purposes of this Market

2009/2010 survey to evaluate whether the alternative camping program addressed the alternative camping needs identified in the 2009 SCORP and, whether alternative camping opportunities respond to the changing demographics of California residents. Currently, the State of California offers 108 alternative camping facilities. Offerings range from rustic cabins to comfortable cottages (California Department of Parks and Recreation, 2011).

Figure 2-2. Example of a Small Cabin.

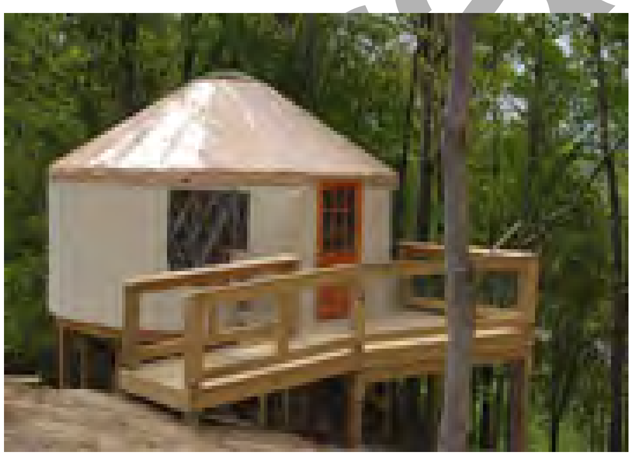

Figure 2-3. Example of a Yurt.

Assessment, it will be considered an overnight occupancy structure that will be located above 455' elevation. As with cabins, yurts can have a variety of amenities.

[17] A tent cabin is constructed of wood and canvas. The structure can have little or no amenities but typically has sleeping platforms with mattress pads, table and benches. Fire pit, pedestal grill, and picnic table are located outside. A tent cabin is to be considered an overnight structure and that should be located above elevation 455' although the structure can easily be removed.

Figure 2-4. Example of a Tent Cabin.

The primary 2009 – 2010 study findings concluded that:

- There is a need for more alternative camping facilities.
- Alternative camping facilities attract visitors during the shoulder season.
- The most popular length of stay was two nights (45.6%), three nights (21%), and one night (19.1%).
- Alternative camping facilities near urban population centers and water were the most popular and had the highest occupancy rates.
- Visitors tended to reserve alternative campsites in spring, summer, and fall, with summer being the most popular.
- Alternative camping (1) is more convenient than using a recreational vehicle or pitching a tent (20.1%); (2) offers a cleaner experience than tenting (13.6%); (3) provides better protection from the weather (10.7%); and (4) makes visitors feel safer and more secure.
- The typical group size is between two to four campers.
- Almost half of alternative campers camped with family (47.8%), followed by camping with family and friends (32.4%), just friends (13.3%), alone (3.4%), organized group (2.5%), and other (0.6%). **Note**: Top responses in the other category came from those campers that had dogs.

- Camping alternatives such as cabins, cottages and yurts can appeal to baby boomers, retirees, new immigrants, campers with disabilities, and families with young children.

- Park managers believe that alternative camping opportunities attract visitors outside of peak camping seasons (71.9%) while 28.1 percent believe they do not.

2.2.5 Unmet Demand

As stated in Chapter 1, it was not only necessary to estimate future demand, but also identify unmet demand. The amount of unmet demand at a recreation area is difficult to measure and a less visible type of recreation demand. There are opportunities available to market the opportunities at Lake Berryessa to the growing population in the market area if quality recreation facilities and services are provided. To increase participation levels at Lake Berryessa and ensure the financial viability of new concession-operated developments, it is necessary to attract those individuals who are:

- Aware of Lake Berryessa but for some reason do not feel welcomed, comfortable, or are unable to visit (e.g., disabled visitors). These are the disenfranchised individuals.

- Planning to visit Lake Berryessa but who have not done so yet (latent visitors).

- Residents who have moved to the area and are not currently aware of the opportunities at Lake Berryessa but are likely to participate as they become more aware (new individuals).

- Individuals who live outside the market area but will travel to Lake Berryessa for a vacation (tourists).

- Previous visitors that have been displaced to other areas and no longer visit Lake Berryessa because of some undesirable site attribute or condition such as poor water quality or infusion of new types of user groups (displaced visitors).

A finding from the 1997 Chico State University Market Survey provided several important examples of unmet demand. The individuals surveyed stated that (1) they did not know about the facilities or lake, (2) it was too far, (3) the lake did not offer interesting recreation, (4) they were too busy and had no time, (4) they preferred somewhere else and, (5) they did not like the physical environment.

An example of unmet demand was revealed by the 2009 *Public Opinions and Attitudes on Outdoor Recreation in California Survey* conducted by the

California State Parks. The following activities were found to be the top five activities that adults would like to participate in more often:

- Walking for pleasure
- Camping at developed sites
- Bicycling on paved surfaces
- Day hiking on trails
- Picnicking in picnic areas.

There is a potential market (unmet demand) for alternative camping (e.g., cabins, park models, yurts) among the 18-34 age group; those in the Hispanic, African American, and other multi-racial ethnic groups; and those with combined incomes of less than $50,000 (California Department of Parks and Recreation, 2011). There is also a potential unmet demand for alternative camping at Lake Berryessa during the off season (i.e., October through March) for those visitors who would not normally visit the lake during the winter season.

According to 2012 statistics, there were 2.94 million visitors to Napa Valley (Visit Napa County, 2012). Some historical figures indicate that approximately 44 percent of the visitors who visit Napa Valley do so during the winter months of October through March (Napa Valley Conference and Visitors Bureau, 2001[18]). There is an opportunity to market to the Napa Valley visitor base (i.e., tourists) by developing quality recreation facilities and services at Lake Berryessa especially during the off-peak recreation season.

A waiting list is an indication of unmet recreation demand. In 2010, there were 113 names on a waiting list for private houseboat moorings and 255 names on a waiting list for other (non-houseboat) moorings (Haas, 2011). In 2013, there are 87 names on a houseboat mooring waiting list at Pleasure Cove and Markley Cove (Reclamation, 2013). In addition, there is a waiting list of 160 individuals for regular moorings at Pleasure Cove (Sparkman, 2013) and approximately 25 at Markley Cove (Bigelow, 2013).

The waiting list for designated dry storage spaces for the existing 25 spaces at Pleasure Cove is approximately 40. There were no dry storage spaces rented at Steele Canyon in 2013 due to the late issuance of the interim contract to Forever Resorts (i.e., the contract was issued just before Memorial Day and the concessionaire was not able to market those spaces). However, it is estimated that those sites will be fully rented in the summer of 2014 (Sparkman, 2013).

[18] Napa Valley Conference and Visitors Bureau is now known as the Napa Valley Destination Council.

Visitation can also be an indicator of unmet demand especially if visitation has decreased from historical numbers due to a specific cause that could be remediated (e.g. provide quality recreation opportunities to the general public that were not available in the past). The historical annual visitation average for a 22 year period from 1981 to 2002 was 1.5 million. Visitation during that period ranged from a high of 1.8 million in 1987 to a low of 1.0 million in 1981, the first year of the historical record. Visitation figures indicate that annual totals are not constant and may fluctuate dramatically from year-to-year based on the existing economic and lake level conditions. For example, the visitation in 1994 was 1.2 million and 1.7 million in 1995, a 38 percent increase from the previous year. The low visitation in 1994 was the result of a drought that occurred the previous three years and an economic recession that occurred at the same time. As the drought ended and economy improved, visitation increased (Reclamation, 2006).

There are no reliable visitation figures available for 2002 through 2010. It is assumed that the average annual visitation for those years was the same as the 22 year historical average of 1.5 million leading up to the expiration of the original concession contracts in 2008/2009. After the expiration of the concession contracts and removal of the 1,500 exclusive use trailers, there was a significant decrease in the annual visitation to Lake Berryessa. The visitation in 2011, 2012 and 2013 was 456,648, 547,899 and 457,933, respectively. The average annual visitation for this three year period is 487,493 which is a 68 percent decrease in visitation from pre 2008/2009 average levels. The decrease in visitation can be attributed to closure of the resorts due to expiration of concession contracts, followed by removal of all facilities and remediation of environmental conditions.

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Chapter 3
Recreation Supply

3.1 Existing Recreation Supply of Facilities and Services at Lake Berryessa

Recreation supply is the current amount and type of outdoor recreation facilities, services and visitor opportunities that are available at a specific site, complex or area.

Public use facilities and services at Lake Berryessa are currently provided by Reclamation and three existing concessionaires. Reclamation provides only limited day use facilities and opportunities while the concession-operated areas offer a combination of day use, overnight camping opportunities, and/or marina-related facilities and services. Table 3-1 summarizes services offered at each recreation area and the recreation provider. More detailed information concerning the existing amenities at each site is discussed under the respective sections below.

Table 3-1. Recreation Providers and the Primary Amenities at Recreation Areas at Lake Berryessa

Amenities	Restrooms	Fees	Boat Launch Ramp	Hand Launch Ramp	Boat Dock Moorage	Boat Rentals	Gas (Boats Only)	Day Use Area	Tent Camping	RV Camping	RV Hookups/Dump Station	Cabins	Fishing License	Store/Supplies/Bait
Markley Cove	•	•	•		•	•	•					•	•	•
Pleasure Cove	•	•	•		•	•	•	•	•	•	•	•	•	•
Steele Canyon	•	•	•					•	•	•				
Spanish Flat	•	•						•	•	•				
Capell Cove	•		•	•				•						
Oak Shores	•			•				•						
Smittle Creek	•			•				•						
Olive Orchard	•							•						
Eticuera	•			•				•						
Putah Canyon	•	•	•					•	•	•				

Source: Bureau of Reclamation

3.1.1 Bureau of Reclamation Facilities

Reclamation-managed facilities at Lake Berryessa include a visitor center, water education center and four day use areas (i.e., Oak Shores, Smittle Creek, Capell Cove, Olive Orchard, and Eticuera). The day use areas offer picnicking, fishing, swimming, and hiking opportunities. Additionally, Capell Cove has a boat launch ramp and Eticuera has a hand launch boat ramp. Reclamation and the California Department of Fish and Wildlife jointly manage a 2,000 acre wildlife area on the east side of the lake that provides excellent bird and wildlife viewing opportunities. There are currently 3 miles of developed trails at the lake; however, Reclamation has a trails management plan outlining the development of additional trails with varying degrees of difficulty. At the present time, Reclamation does not charge any fees for the use of facilities and lands it manages. The number of services offered at the above-mentioned recreation day use areas are:

Oak Shores

- 168 BBQ grills
- 32 individual shade shelters each with one table and one grill
- Six group use shelters each with eight tables and one grill
- 130 unsheltered tables with a grill
- 11 unsheltered tables without a grill
- Eight flush restrooms, 2 vault toilets

Smittle Creek

- 10 tables (7 with grills, 3 without)
- Seven BBQ grills
- Four flush restrooms (2 in day use area, 2 on Smittle Creek Trail)

Olive Orchard

- Two tables each with a BBQ grill
- One vault toilet

Capell Cove

- Boat launch with two lanes
- One picnic site
- One flush restroom

Eticuera

- One hand launch ramp with one lane
- Zero picnic sites
- One vault toilet

3.1.2 Markley Cove Resort

Markley Cove is a concession operated under an interim concession contract with Reclamation covering the period May 27, 2013 through December 31, 2014 with two 1-year options for renewal. Markley Cove is a full-service marina that offers wet slips, fueling and pump-out services as well as boat launching, boat rentals, house boating, day use and lodging. Markley Cove currently offers the following quantity of services:

- Eight covered overnight boat rental slips
- Eight cabins
- Zero picnic sites
- Three hundred eighty one boat slips of various sizes (38 of the slips are for private houseboats)
- Rental boats: 16 personal water crafts, 10 ski boats, 7 patio boats, 3 fishing boats
- Convenience store
- One primary and one secondary launch ramps (used at different lake levels)
- One male and female restroom inside convenience store
- Chemical toilets outside

3.1.3 Pleasure Cove Marina

Pleasure Cove Recreation Area is a concession operated by Forever Resorts under a long-term concession contract with Reclamation for the period covering June 21, 2010 through December 31, 2040. Forever Resorts also operates Steele Canyon and Spanish Flat Recreation Areas under an interim concession contract with Reclamation covering the period covering May 20, 2013 through December 31, 2013 with two 1-year options for renewal. Forever Resorts offers RV and tent camping, cabin rentals, day use, a general store, and a full-service marina featuring boat launching, fueling service, boat slip rentals, and houseboat, ski boat, and jet-ski rentals. Pleasure Cove currently offers the following quantity of services:

- Ninety two tent camping sites
- Seven overflowing tent camping sites
- Thirteen RV sites with electric hookup
- Twelve RV sites with electric, water, and sewer hookup
- Three picnic sites
- Twenty five dry storage spaces
- Eight overnight rental slips at fuel dock
- Twenty four cabins

- One hundred fifty eight boating slips of varying sizes
- Twenty of the 158 slips are for houseboats (private)
- Rental boats: 6 houseboats, 7 personal water craft, 4 fishing boats, 3 ski boats, 7 deck cruisers, 1 patio pontoon
- Convenience store
- One launch ramp, 2 lanes
- Four restroom buildings. Each has male and female restrooms
- Two of the four restroom buildings have showers

Steele Canyon

- Nineteen tent only sites
- Fifty nine standard sites (RV or tent)
- Six RV sites
- Twenty five picnic sites
- Forty dry storage sites
- One launch ramp, 6 lanes
- Chemical toilets
- Accessible wheelchair toilets
- No potable water

Spanish Flat

- Ten tent only sites
- Forty five standard sites (RV or tent)
- Ten picnic sites
- Chemical toilets
- Accessible wheelchair toilets
- No potable water

3.1.4 Putah Canyon Recreation Area

Putah Canyon Recreation Area is operated by Royal Oak Park Management under an interim agreement with Reclamation dated May 24, 2013. The contract will expire on December 31, 2015 with a one-time option to renew for one additional year. The recreation area at a minimum is open from Memorial Day weekend through mid-September and is located approximately ½ mile north of Pope Canyon Road and about 45 minutes from Winters and Napa. There are accessible wheelchair toilets but no potable water. Activities include fishing, swimming, and boating. The campground is the northern most recreation area on Knoxville Road on the west shore of Lake Berryessa. Putah Canyon currently offers the following quantity of services.

- Forty six tent only sites
- Thirty seven standard tent and RV sites
- Seventeen RV only sites
- Twenty picnic sites
- Two launch ramps, 5 lanes
- Chemical toilets

Following is a summary of all the existing facilities and services at Lake Berryessa recreation areas.

Table 3-2. Summary of the Quantity of Existing Facilities and Services at Lake Berryessa in 2013

Facility or Service	Quantity	Facility or Service	Quantity
RV sites w/ no hookups	23	Picnic sites	250
RV sites w/ electric only	13	Number of ramp lanes	13
RV sites w/ electric, water & sewer	12	Convenience stores	2
Standard tent or RV sites	141	Flush toilets	13
Tent camping sites	167	Vault toilets	9
Tent overflow sites	7	Restrooms w/ showers	2
Cabins/park models w/ no amenities	32	Fishing boat rentals	7
Boat slips of various sizes	539	Personal water craft rentals	23
# of overnight boat rental spaces	8	Ski boat rentals	13
Private houseboats	58	Deck cruisers	7
Commercial houseboats	6	Patio pontoons	1
Dry storage spaces	65		
Launch Ramps	5		
Picnic areas	7		

Source: Bureau of Reclamation.

3.2 Existing Recreation Supply at Comparable Water-Based Recreation Areas

Following are brief descriptions of four comparable recreation areas within or near the market area. Figure 3-1 shows the location of the comparable water-based recreation areas. This section is intended to provide a detailed side-by-side comparison of a variety of recreation variables at other water-based recreation areas. The sites selected for comparison purposes are Lake Oroville, Lake Sonoma, Folsom Lake, and New Melones Lake. These comparable[19] sites

[19] The detailed comparison of the four water-based recreation areas is not to be considered a comparable evaluation that establishes the rates that potential concessionaires can charge the public for goods and services; it

were selected because they have similar geography, topography, vegetation, recreation opportunities, infrastructure and facilities, and socioeconomic profile. Comparing different recreation variables across several water-based recreation sites can assist in determining the existing supply of facilities and services within a reasonable distance from Lake Berryessa. Due to the lack of comparable recreation areas within the market area, one of the areas selected is on the fringe of the market area (i.e., New Melones Lake). Lake Berryessa is the largest water body within the market area except for Clear Lake and the Sacramento-San Joaquin Delta. For reasons given in the following section (*Existing Recreation Supply at Selected Recreation Areas*), these two water bodies were not selected for a more detailed comparison of recreation variables.

3.2.1 Lake Oroville State Recreation Area

Lake Oroville is a State Recreation Area (SRA) located on the Feather River at the foothills of the Sierra Nevada Mountains in Butte County, California. The lake is the second largest reservoir in California, after Lake Shasta. The lake is located approximately 133 miles north, northeast of Lake Berryessa. The lake is slightly outside the market area (i.e., more than 66 miles from Lake Berryessa). For the purposes of this Market Assessment, it is being considered as a major recreation lake comparable because of the lake amenities and its relative close proximity to Sacramento (i.e., it competes for Sacramento's outdoor recreationists). The lands and facilities at the lake are owned by the State of California and operated by the California Department of Parks and Recreation (CDOPR). The Oroville Wildlife Area is managed by the California Department of Fish and Wildlife. The dam and reservoir were developed as part of the State Water Project[20]. The 770-foot Oroville Dam is the highest earth filled dam in the United States (State of California, 2004). The lake has a surface area of 15,805 surface acres and a water surface elevation of 902 feet above sea level.

The lake offers a wide variety of outdoor recreation opportunities including camping, picnicking, horseback riding, hiking, sail and power boating, water skiing, fishing, swimming, boat in camping, floating campsites, and horseback camping.

The South Forebay of the lake is used by speed boats, personal watercraft and hydroplanes. The North Forebay is reserved for non-motorized use only, such as sailing and windsurfing. Refer to Table 3-3 for the quantities of several recreation variables at Lake Oroville.

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is intended to help describe the supply of existing recreation facilities and opportunities at four comparable recreation sites that are located within or relatively close to the market area.

[20] The State Water Project, operated by the California Department of Water Resources, is a water storage and delivery system of reservoirs, aqueducts, powerplants, and pumping plants. Its primary purpose is to store and distribute water to supplement the needs of urban and agriculture water users in Northern California, San Francisco Bay Area, San Joaquin Valley, and Southern California.

Figure 3-1. Existing Recreation Comparable Water-Based Recreation Areas

3.2.2 Lake Sonoma

Lake Sonoma is a man-made federally-owned and operated reservoir located west of Healdsburg, California. The lake is 45 minute drive from Santa Rosa and a two-hour drive from San Francisco. The lake and surrounding lands are located in the coastal foothills of Sonoma County. The lake was created by the construction of Warm Springs Dam on Dry Creek and is under the jurisdiction of the U.S. Army Corps of Engineers (COE). The dam aids in flood control and a hydroelectric plant produces electricity from the water that is released downstream. However, a minimum of stream flow must be maintained in Dry Creek to allow for fish migration.

Although Lake Sonoma is considerably smaller in size than Lake Berryessa and Lake Oroville, it was selected as a comparable recreation area due to its rural setting, federal ownership, similar recreation opportunities, and the presence of a privately operated commercial marina. Additionally, there are existing recreation opportunities at Lake Sonoma that are not available at Lake Berryessa, but could be developed to provide the public with opportunities that have not historically been available.

Recreation opportunities consist of picnicking, boating, swimming, water skiing, fishing, horseback riding, hiking, camping, and sightseeing (COE, 2010). There are an abundance of primitive hike-in and boat-in campsites located throughout the reservoir area offering visitors a unique boating, hiking, and camping experience. There is a developed campground that offers two group sites and standard tent and trailer camp sites with no electricity. The campground has showers, drinking water, flush toilets, dump station, and playground. Refer to Table 3-3 for the quantities of several recreation variables at Lake Sonoma.

3.2.3 Folsom Lake State Recreation Area

Folsom Lake is located on the American River at the base of the foothills of the Sierra Nevada Mountains approximately 25 miles northeast of Sacramento, California in Placer, El Dorado, and Sacramento Counties. The lake is located approximately 98 miles east of Lake Berryessa and is considered a recreation lake that competes with Lake Berryessa for visitors primarily from the Sacramento area. Folsom Dam and the lake are part of the Central Valley Project, a federal water project under the jurisdiction of Reclamation as part of a multipurpose project that provides flood control, hydroelectricity, drinking water and water for irrigation. Folsom Lake is a State Recreation Area managed for recreation purposes by the CDPR under a management agreement with Reclamation. The lake offers a variety of recreation opportunities for hiking, biking, jogging, camping, picnicking, horseback riding, water skiing, fishing, and boating. Of the water bodies discussed in this section, Folsom Lake has the greatest number of visitors due to its close proximity to Sacramento. Refer to Table 3-3 for the quantities of several recreation variables at Folsom Lake.

3.2.4 New Melones Lake

New Melones Lake is located in the western foothills of the Sierra Nevada Mountains in Calaveras and Tuolumne counties approximately 88 miles southeast of Sacramento, California and approximately 159 miles from Lake Berryessa. New Melones Dam was constructed on the Stanislaus River by the COE but subsequently transferred to Reclamation for integration into the Central Valley Project. New Melones is operated by Reclamation to provide water storage for irrigation, flood control, hydropower, water quality, recreation, and fish and wildlife enhancement purposes. The lake offers a variety of outdoor recreation facilities and opportunities to the public. Activities include boating (sailing, kayaking, canoeing), waterskiing and wakeboarding, fishing, swimming, camping, hunting in designated areas, rock climbing, mountain biking, horseback riding, spelunking, and day use (e.g., picnicking, hiking, wildlife viewing, photography etc.). Boating and boating-related activities are the primary recreation activities occurring at the lake. Refer to Table 3-3 for the quantities of several recreation variables at New Melones Lake.

Table 3-3 compares the quantity of selected recreation variables at Lake Berryessa with other recreation areas within a reasonable distance from Lake Berryessa.

Table 3-3. Comparison of Recreation Variables for Lake Sonoma, Lake Oroville, New Melones Lake, Folsom Lake, and Lake Berryessa

Variables	Lake Sonoma	Lake Oroville	New Melones Lake	Folsom Lake	Lake Berryessa
Reservoir Size					
Total water surface acres	2,700	15,805	12,500	11,500	19,250
Shoreline miles (high pool)	50	167	100	75	165
Water elevation at high pool (ft.)	200	922	1,088	466	213
Length and width at widest point (miles)	9 x 5.7	10 x 4	21 x 2	10.5 x 3.5	23 x 3
Facilities					
Developed campgrounds	1	3	5	2	1
Developed campsites	264	277	305	169	124
Undeveloped/primitive campgrounds	15	0	0	0	3
Undeveloped/primitive campsites	115	0	0	0	239
Walk-to campsites	0	0	62[1]	0	0
Hike-in only campgrounds	1	0	0	0	0
Hike-in only campsites	2	0	0	2	0
Boat-in only campgrounds	7	6	0	0	0

Table 3-3. Comparison of Recreation Variables for Lake Sonoma, Lake Oroville, New Melones Lake, Folsom Lake, and Lake Berryessa

Variables	Lake Sonoma	Lake Oroville	New Melones Lake	Folsom Lake	Lake Berryessa
Boat-in only campsites	55 individual sites and one group site up to 40 people	80	0	0	0
Combined boat-in and hike in campgrounds	7	0	0	0	0
Combined boat-in and hike in campsites	58 individual sites and one group site up to 32 people	0	0	0	0
Floating campsites	0	10	0	0	0
Camping cabins/park models	0	0	0	0	32
Yurts	0	0	0	0	0
Picnic areas	8	6	6	5	9
Picnic sites	30	245	111	247	250
Miles of hiking trails	47	51	31.5	68	3
Miles of bike paths	40	51	31.5	27	3
Miles of horseback riding trails	40	51	9.7	0	0
Miles of OHV trails	0	0	0	0	0
Boat launch sites	3	5	3	6	5
Boat access lanes	7	64	16	58	13
Number of marinas	1	2[2]	1	1	2
Number of rental water craft[3]	1 operator (23)	2 operators (19)	1 operator (47)	1 operator (20)	2 operators (65)
Total slips	250	530	138	685	539
Waiting list for moorings	6	56	250	625	145
Slips for houseboats	12	100	38	0	58
Buoys for houseboats	0	590	50	0	0
Number of private houseboats	12	690	88	0	52
Number of commercial houseboats	0	12	13	0	6
Visitor centers	1	1	1	1 (not full service)	1

Table 3-3. Comparison of Recreation Variables for Lake Sonoma, Lake Oroville, New Melones Lake, Folsom Lake, and Lake Berryessa

Variables	Lake Sonoma	Lake Oroville	New Melones Lake	Folsom Lake	Lake Berryessa
Other facilities	Fish hatchery	Wildlife area	2 group camps and equestrian area/trais at the Peoria Wildlife Area	Activity Center with meeting facilities & kitchen	Water Education Center & Wildlife area
Management					
Latest annual visitation reported by entity	426,162	1 M	700,000	2 M	550,000
Entrance fee charged	0	$3 per vehicle	N/A	$5 to $12 per vehicle	N/A
Camping fee charged	Developed sites - $15 Primitive boat and hike in sites (single - $14, group - $56)	$7 to $20	$22/standard sites & $18 for hike-in sites	$28 to $58/night	$25 to $35
Boat launch fee charged	$15 @ marina	$2	$10/boat & trailer	$10/boat	$20-25
Day use fee charged	0 ($3 starting in 2014)	$2	Covered by entrance fee	Covered by entrance fee	$8

Source: California Department of Parks and Recreation, 2008 and 2013; Laird, Jeffrey, 2013; Miller, Joel, 2013; Prieto, John, 2013: Cook, Sherry, 2013: Batchelder, Casey, 2013; Cartier, Emmett, 2013; Polk, Janet, 2013.

[1] Walk-in campsite at New Melones are campsites where you cannot park your vehicle next to the site. They are located within a developed campground; however, one must carry their camping equipment a very short distance. Walk-in sites may differ from a hike-in campsite in the distance traveled, amenities at the site, and the location of the sites (i.e., hike-in campsites are typically located in remote areas). The 62 walk-to sites are counted separately from the 305 developed sites.

[2] One marina has 100 houseboats moored at a dock system and not in slips or buoys.

[3] Number in parentheses includes the number of units such as the numbers of PWCs, ski boats, canoes, deck cruisers etc. available for rental.

For comparison purposes, certain observations can be made from Table 3-3 that were useful in recommending the types and quantities of facilities and services that may be provided at Lake Berryessa. To be competitive in the market place, it is important to address some of the shortfalls existing at Lake Berryessa (e.g., Lake Berryessa has no boat-in or hike-in campgrounds, or floating campsites). The most important observations are:

- Folsom Lake has the greatest number of annual visitors (2M) followed by Lake Oroville (1M), New Melones Lake (700,000), Lake Berryessa (550,000), and Lake Sonoma (426,162).
- Lake Berryessa is the largest water body with 19,250 surface acres. Lake Sonoma is the smallest with 2,700 surface acres.

- Even though Lake Berryessa is the largest water body, it has the least number of developed campgrounds (1) and the least number of developed campsites (124). New Melones Lake has the most developed campgrounds (5) and the most campsites (305 including 7 camp host sites).

- Lake Berryessa has the largest number of undeveloped campsites (239).

- Lake Berryessa has no floating campsites, hike-in or boat-in campsites, and no horseback riding trails.

- Even though Lake Sonoma is the smallest water body, it has the greatest number of combined hike-in and boat-in only campgrounds (7) and combined hike-in and boat-in only campsites (58).

- New Melones has the most walk-to campsites (62).

- Lake Oroville has the most boat-in only campsites (80).

- Lake Sonoma has the most picnic areas (8) followed by Lake Berryessa (7).

- Folsom Lake has the most individual picnic sites (247) followed by Lake Oroville (245) and Lake Berryessa (231).

- New Melones has the most miles of hiking trails (68) and Lake Berryessa has the least (3).

- Lake Oroville has the most miles of trail that can be used for bike and horseback riding (51).

- Lake Berryessa and Lake Oroville have the most marinas (2) while the others have one marina each.

- Folsom Lake has the largest number of private boat slips (685) followed by Lake Berryessa (539) and Lake Oroville (530). However, Lake Oroville has an additional 590 buoyed houseboats for a total of 1,120 moorings/slips.

- Lake Berryessa has the most total boat rentals at 65 followed by New Melones Lake at 47.

- Lake Oroville has the most launch lanes (64) followed by Folsom Lake (58), New Melones Lake (16) and Lake Berryessa (13).

- Each water body has a visitor center.

3.3 Existing Recreation Supply at Selected Recreation Areas

The following are brief descriptions of a variety of recreation areas within the market area that were not used as direct comparables. This section is intended only to provide a snapshot of the current supply of selected water-based and land-based recreation facilities and services near Lake Berryessa. Looking at both land-based and water-based areas can help in determining the recreation supply and what types of new recreation facilities and services might be developed at Lake Berryessa to be competitive in the market area, as well as meet current demand and the expectations of residents within the market area. Figure 3-2 shows the locations of the selected recreation areas discussed in this section.

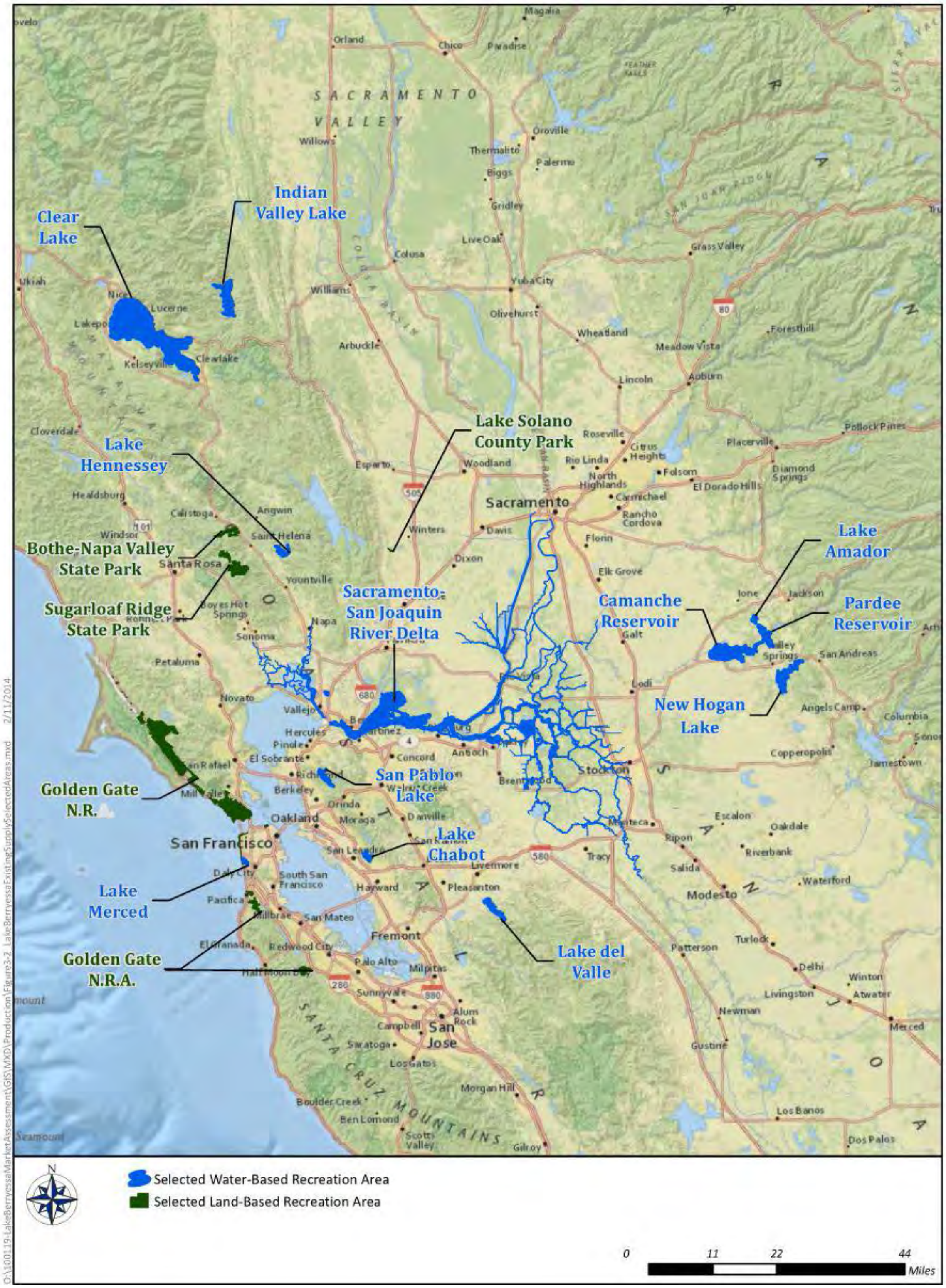

Figure 3-2. Existing Recreation Supply at Selected Recreation Areas

As mentioned previously, Clear Lake and the Sacramento-San Joaquin Delta were not selected as direct comparables to Lake Berryessa. The outdoor setting of these two areas is not similar to the rural setting at Lake Berryessa and the water-based areas that were selected in the previous section (i.e., Folsom Lake, New Melones Lake, Lake Sonoma, and Oroville Reservoir). Both areas are highly developed and commercialized and are bordered by private land, small communities, and private commercial business (i.e., marinas, campgrounds and RV parks, hotels, motels, and restaurants).

As previously mentioned in Chapter 2, approximately 75 percent of the visitors to Lake Berryessa reside in the Bay Area. Therefore, it is appropriate to acknowledge three of the primary recreation providers in the Bay Area: East Bay Regional Park District (EBRPD), East Bay Municipal Utility District (EBMUD), and National Park Service (NPS). Some of the areas highlighted in this section are owned and/or managed by these entities.

EBRPD has a system of beautiful public parks and trails in Alameda and Contra Costa counties on the eastern side of San Francisco Bay. They offer 65 regional parks, recreation areas, wilderness, shorelines, and preserves on over 114,000 of water and land acres, hiking/biking trails, flat water recreation areas, limited number of campsites (i.e., 235), youth camping areas, interpretive and education centers, numerous individual and group day use sites, play areas, as well as wedding, meeting, and banquet facilities (East Bay Regional Park District, 2014).

EBMUD provides varying degrees of water-dependent and water-enhanced recreation opportunities on approximately 28,000 land and water surface acres owned by the district. Although facilities vary at each recreation area, they generally include marinas, boat docks, boat ramps, fishing docks, picnic areas, informal play areas, parking, and support facilities (e.g., restrooms, bait and tackle shops, and food services). EBMUD lands offer a unique regional opportunity by virtue of their geographic location. They are surrounded by large parcels belonging to EBRPD and are reached from paved roads and trails that connect regional open space lands (EBMUD, 1996 -1999).

The Golden Gate National Recreation Area (NRA) is managed by the NPS and situated in one of the most demographical diverse regions in American. The lands consist of a variety of ecologically- and historically-significant landscapes surrounding the San Francisco Bay Area. The lands are considered costal preserves that encompass approximately 60 miles of bay and ocean shorelines (National Park Service, 2011). The park contains an abundance of historical and cultural assets and offers the general public with typical day use activities (i.e., sightseeing, hiking, biking, picnicking, etc.). Refer to section 3.3.15 below for a more detailed description of the recreation opportunities available within the Golden State NRA.

The Golden Gate NRA was also not chosen as a direct comparable because it is a land-based recreation area that is considered to be one of the world's largest ***urban*** parks. The NRA attracts local, national and world visitors. Lake Berryessa and the direct comparable water bodies highlighted in this chapter have a ***rural*** type outdoor setting and do not have the national and international appeal of the Golden Gate NRA.

The largest reservoir discussed in this section is Clear Lake, which is the largest lake in California with 43,785 surface acres. The smallest reservoir discussed in this section is Lake Amador with 385 surface acres. Three areas discussed below are considered land-based recreation areas although two of those areas are located adjacent to perennial streams (i.e., Lake Solano County Park and Sugarloaf Ridge State Park). All the areas mentioned in this section offer a certain amount of traditional outdoor recreation opportunities while some offer the same commercial services as Lake Berryessa.

3.3.1 Lake Solano County Park

Lake Solano County Park is located on Putah Creek approximately 6 miles downstream of Lake Berryessa just west of Winters, California. Owned by Reclamation, Lake Solano has been managed by Solano County since 1971 under an agreement with Reclamation. The park offers many recreational opportunities including boating, hiking, biking, bird watching, wildlife photography, swimming, picnicking, camping and fishing. The lake is considered one of the best fly fishing spots for Brown and Rainbow trout in the Sacramento Valley. The campground has 83 campsites, of which 36 have water and electric hookups. The campground has flush toilets, sinks and hot showers. The day use area has picnic sites, group picnic facilities, and a river boat launch ramp for non-powered boats, parking, and restrooms.

3.3.2 Clear Lake

Clear Lake is located on Cache Creek near the southern boundary of the Mendocino National Forest in Lake County, California. Clear Lake is not to be confused with the Clear Lake that is located in northern California near the California/Oregon border. The lake is located approximately 60 miles northwest of Lake Berryessa. The lake is the largest natural freshwater lake in California with a water surface area of 43,785 surface acres with a water elevation of 1,329 feet above sea level and is 19 miles long and 8 miles wide at its widest point. Even though the lake is only 60 miles from Lake Berryessa, it was not considered as a direct comparable because of its commercialized environment.

The lake is surrounded by public and private land and, therefore, has numerous private campgrounds, lodging accommodations such as hotels/motels nearby, and several marinas that offer a variety of marina-related services such as fueling, launch ramps, moorings, food service, and boat rentals. Clear Lake currently has five privately owned marinas, 11 public boat ramps, 18 private boat ramps, 11 sites that provide boat rentals, 13 campgrounds that also provide some RV hookups, and 5 campgrounds that strictly offer only RV camping. Clear Lake State Park offers more traditional type recreation opportunities such as hiking, camping, park model cabins, picnicking, waters skiing, fishing, and boating. Clear Lake State Park receives approximately 175,000 annual visitors (Bill Salata, 2013).

3.3.3 Lake Hennessey

Lake Hennessey is located about five miles east of Rutherford, California, and 21 miles west of Lake Berryessa. The lake has a water surface area of 850 surface acres, water surface elevation of 331 feet above sea level, and is 1.9 miles long and 3,500 feet wide. Conn Creek Dam was constructed by Napa County in order to mitigate potential flooding downstream in the city of Napa. The lake is the primary water source for Napa. Recreation activities include canoeing, kayaking, fishing, and power boating that is limited to a maximum 10 horsepower motors. No swimming, wading, or water contact sports are allowed. The lake is well known for its quality shoreline or boat fishing opportunities. There is a launch ramp and dock, restrooms, picnic tables, group picnic shelter, playground, drinking water and ample parking. There is no camping allowed and visitors are encouraged to travel to Lake Berryessa for overnight camping.

3.3.4 Indian Valley Reservoir

Indian Valley Reservoir is a manmade lake in Lake County, California, 27 miles west of Williams and 73 miles north of Lake Berryessa. The lake has a water surface area of 4,000 surface acres, 22 miles of shoreline, water surface elevation of 1,421 feet above sea level, and is 6.2 miles long and 1.2 miles wide. Indian Valley Dam was constructed on Cache Creek for water storage, irrigation and flood control. Although the dam and reservoir is in Lake County, it was constructed by Yolo County who owns the stored water rights.

The reservoir is within the Bureau of Land Management's Walker Ridge Recreation Area. Recreation activities includes boating, camping, swimming, sailing, windsurfing, fishing, canoeing, kayaking, hiking, bicycling and horseback riding. There is a marina, two boat launch sites, and two primitive boat/hike-in campgrounds. Yolo County offers a fee RV and tent campground near the dam while the boat/hike-in campgrounds are free and on a first-come, first-served basis. Jet and water skiing are not permitted and there are no launches.

3.3.5 Sacramento-San Joaquin Delta

The Sacramento-San Joaquin Delta (Delta) is an expansive 1,000 mile inland river delta formed at the western edge of the Central Valley by the confluence of the Sacramento and San Joaquin rivers. The Delta empties into San Pablo Bay and is located midway between San Francisco and Sacramento and approximately 58 miles south of Lake Berryessa. The Delta offers a multitude of recreation opportunities served by over 100 marinas, waterside resorts, RV parks and campgrounds. There are many restaurants, grocery stores, bait and tackle shops, and over 50 boat launching sites. Public parks and bank-fishing sites are plentiful. The Delta has approximately 50 campgrounds with a total of over 2,800 camp sites (California Delta Chambers & Visitors Authority, 2013).

3.3.6 Sugarloaf Ridge State Park

Sugarloaf Ridge State Park is a 2,700 acre land-based recreation area located at the headwaters of Sonoma Creek approximately one hour from San Francisco, seven miles east of Santa Rosa, and 44 miles east of Lake Berryessa. The headwaters of Sonoma Creek run through a canyon and gorge and across the valley floor beneath scenic rock outcroppings. There are hiking, horseback riding and biking opportunities on the 25 miles of trails located at the park. On a clear day visitors can view the Golden Gate Bridge and the Sierra Nevada Mountains from the 2,729 foot summit of Bald Mountain. There are 47 standard campsites that can accommodate RVs up to 27 feet and trailers up to 23 feet. The recreation area has one group campground with room for up to 50 individuals. Amenities located onsite include showers, restrooms, drinking water, picnic areas, visitor center with tables.

3.3.7 Botha-Napa Valley State Park

Bothe-Napa Valley State Park is a 1,991 land-based recreation area located in Napa County near St. Helena, California. The park is located in the heart of the Napa Valley wine country and approximately 31 miles west of Lake Berryessa. During the 2011 California budget crisis, the park and adjacent Bale-Grist Mill State Historic Park were targeted for closure. The Napa County Regional Park and Open Space District (NCROSD) negotiated with the State of California to operate and maintain the two parks. NCROSD manages both parks in partnership with the Napa Valley State Parks Association. The park offers year-round camping, picnicking, hiking, and seasonal swimming in the park's spring fed pool. Bothe-Napa Valley State Park offers 30 tent and RV sites with no hookups, nine walk-in sites, 10 miles of hiking trails, one hike-in/bike-in site, three accessible drive-to sites with no hookups, one 30-person group campsite, and three yurts. Grills, picnic tables, restrooms, showers, and fire rings are available. Drinking water is located close to all sites.

3.3.8 Camanche Reservoir

Camanche Reservoir is a man-made reservoir located east of Clements, California in Amador, Calaveras and San Joaquin counties and approximately 117 miles southeast of Lake Berryessa. The reservoir has a water surface area of 7,700 surface acres, 53 miles of shoreline, water surface elevation of 135 feet above sea level, and is 5 miles long and 3 miles wide. Camanche Dam was constructed on the Mokelumne River. The reservoir is administered by EBMUD; however, the recreation activities are managed by a concessionaire (Camanche Recreation Company). There are 15 campgrounds with 762 campsites including RV full hookups and sites with yurts. Overnight accommodations also include cottages, motel rooms, and a mobile home park. Amenities include two full service marinas that provide boat launching, gas, moorings, and rental boats. Reservoir tours, laundry facilities, coffee shop and snack bar are also available. In addition to camping, the recreation opportunities include boating, water skiing, fishing, picnicking, and hiking. There are also tennis, basketball and volleyball courts located on the north and south shores as well as playgrounds.

3.3.9 Pardee Reservoir

Pardee Reservoir is a man-made reservoir in the Sierra Nevada Foothills within Amador and Calaveras County, California and is located 30 miles from Stockton and approximately 120 miles south of Lake Berryessa. The reservoir is operated and maintained by the EBMUD but the recreation activities are managed by Pardee Lake Recreation, Inc., a concessionaire under a long-term contract. The reservoir has a surface area of 2,134 acres, 25 miles of shoreline, and a water surface elevation of 600 feet above sea level. Pardee Dam was constructed on Mokelumne River to supply drinking water to the East San Francisco Bay Area. Overnight facilities include one developed campground with 100 sites and an RV park with full hookups. Other amenities located at the reservoir include day use areas, two swimming pools, restrooms with showers and flush toilets, laundry facilities, and play ground. Body contact activities such as swimming, wading, waterskiing, and jet skiing are not allowed although boating is a popular activity. Other recreation activities include fishing, hiking, biking. There is one boat launch site and a marina that provides mooring slips, gas, boat rentals, boat, trailer and RV storage, and convenience store. There is also a restaurant located at the reservoir.

3.3.10 New Hogan Reservoir

New Hogan Reservoir is a man-made reservoir in the foothills of the Sierra Nevada Mountains in Calaveras County northeast of Stockton, California and approximately 125 miles south of Lake Berryessa. The reservoir has a water surface area of 4,410 surface acres, 48 miles of shoreline, water surface elevation of 666 feet above sea level, and is 3 miles long and 2 miles wide. New Hogan Dam was constructed on the Calaveras River for flood protection, drinking water, power generation, and irrigation purposes. The reservoir is under the jurisdiction of the COE. There are nine recreation areas with a total of 98 picnic sites, 227 camping sites, 20 miles of trails, and four boat ramps. The primary recreation activities include swimming, picnicking, fishing, sightseeing, boating, camping, and water skiing.

3.3.11 Lake Amador

Lake Amador is a man-made reservoir located in Amador County near Ione and Buena Vista, California and approximately 105 miles southeast of Lake Berryessa. Jackson Creek Dam was constructed on Jackson Creek by the Jackson Valley Irrigation District but recreation activities are managed by Lake Amador Resort. The reservoir has a water surface area of 385 acres, 14 miles of shoreline, and a water surface elevation of 325 feet above sea level. Amador Resort offers marina services including fishing and motorized boat rentals, boat ramp, docks, and boat storage. The resort also has 150 developed camping sites, 73 full hook up sites, flush toilets, showers, and drinking water. There are

12 boat-in campsites with pit toilets but no water. Additional amenities include general store, restaurant, club house, swimming pond, and waterslide. Lake Amador is known as an excellent fishing lake but also provides opportunities for hiking and biking on the trails at the lake. Jet and water skiing are not allowed.

3.3.12 Lake Del Valle

Lake Del Valle is a man-made lake located in unincorporated Alameda County approximately 10 mile south of Livermore, California and approximately 97 miles south of Lake Berryessa. The regional park is a California State Recreation Area that is operated by the EBRPD. The lake has a surface area of 750 acres, 16 miles of shoreline, water surface elevation of 745 feet above sea level and is 5 miles long. The lake is surrounded by 4,395 land surface acres that are available for a variety of outdoor recreation opportunities. Activities and services include hiking, camping, nature study, boating, fishing, swimming (2 swim beaches with lifeguards), windsurfing, and picnicking (landscaped picnic areas for small and large groups). Camping facilities include 150 sites, 21 of which offer water, sewer, and electric hookups and several group campsites for groups of 11 people or more. There is also an individual and group equestrian camp, boat launch facility and marina available at the lake. The regional park offers 67 miles of hiking and horseback riding trails and is the gateway to the Ohlone Wilderness Trail (i.e., 28 miles of scenic backcountry trails).

3.3.13 Lake Chabot

Lake Chabot is a man-made lake located in Alameda County just east of San Leandro, California and approximately 84 miles south of Lake Berryessa. Part of the lake lies within the city limits of Oakland. The lake and surrounding lands are owned by the EBMUD; however, they are leased to the EBRPD and thus operated and maintained as part the EBRPD's regional park system. The lake has 340 surface acres and a surface elevation of 243 feet above sea level. The lake serves as an emergency water supply; therefore, regulations are in place to maintain water quality standards (e.g., no swimming). Activities and services include canoe, kayak, and boat rentals, marina, café, tour boat rides, grassy play area, horseshoe pits, picnicking, as well as hiking, bicycling, and jogging on the many trails around the lake and adjoining lands. The lake offers 20 miles of hiking trails, which connect to an additional 70 miles of trails in the Anthony Chabot Regional Park. The paved 3.52-mile East and West Shore trails provide access to the south and east shores of the lake. The Lake Chabot bicycle loop covers 12.42 miles via the live Oak Trail, and 14.41 miles via the Honker Bay Trail. In addition, various trails in the Anthony Chabot Regional Park provide access to the Skyline National Trail north of Lake Chabot.

3.3.14 Lake Merced

Lake Merced is the freshwater lake located in southwest corner of San Francisco and approximately 87 miles south of Lake Berryessa. The lake is owned by the San Francisco Public Utilities Commission (SFPUC), which is responsible for the lake's water resources. The San Francisco Recreation and Parks Department, under a memorandum of understanding with SFPUC, manages the recreation and natural resources. The recreation area is composed of four lakes: North, East, South, and Impound. North and East Lakes are connected directly to each other by a narrow channel. The recreation area has 395 water surface acres, 219 land acres, and water surface elevation of 23 feet above sea level. The lake is the largest freshwater lake in San Francisco and supports numerous recreation activities, including boating, fishing, golfing, jogging, hiking, rowing, sailing, bicycling, sheet shooting, picnicking, and appreciation of the natural environment. Facilities include paved trails, snack bar, bar and grill, picnic tables, BBQ grills, restrooms, and boat ramp. Lake Merced contains the largest expanse of wetland habitat in San Francisco and supports an array of sensitive plant and animal species. The lake is home to the Pacific Rowing Club and St. Ignatius College Prep Rowing Team, both competitive rowing programs for San Francisco high school students.

3.3.15 Golden Gate National Recreation Area

Golden Gate NRA spans three Bay Area counties (i.e., Marin, San Francisco, and San Mateo) and provides approximately 14 million annual visitors a variety of outstanding recreation opportunities on approximately 80,002 acres. The NRA is located approximately 85 miles south of Lake Berryessa and is under the primary jurisdiction of the NPS. The NRA can be considered a complex that includes, among other areas, Fort Point National Historic Site, Muir Woods National Monument, Alcatraz Island, Marin Headlands, San Francisco Maritime National Historic Park, and the Presidio of San Francisco. Bay Area residents account for the majority of visitors to most sites within the NRA; however, other sites such as Alcatraz Island and the lands of the Marin Headlands, are major tourist destinations, receiving visitors from across the United States and around the world (National Park Service 2011). Trails are a significant part of the NRA. There are 196 miles of paved and single-track paths that offer hiking, walking, and jogging opportunities. These multiuse trails also serve equestrians and mountain bikers. Overnight lodging facilities exist within the NRA and are provided by both the NPS and its partners, including hostels at Fort Mason, Montara Lighthouse, and the Marin Headlands, and camping areas in Marin County. There are four campgrounds within the NRA that offer a very limited number of campsites: Bicentennial (3 sites), Hawk Camp (3 sites), Haypress (5 sites) and Kirby Cove Campground (4 sites). The many beaches along the 60 miles of coastal shoreline play an important role in providing beach-related outdoor recreation activities to the many visitors. There are also many educational and learning opportunities provided by the many interpretative sites dealing with a range of topics such as World War I and II military history, Mexican Republic, Native American settlements, and California God Rush. There are several visitor centers, historic interpretive sites, and information centers located throughout the NRA (e.g., Muir Woods National Monument, Marin Headlands, and Presidio of San Francisco Visitor Centers).

3.3.16 San Pablo Reservoir

San Pablo Reservoir is a man-made reservoir located in Contra Costa County, California just north of Orinda and south of El Sobrante and Richmond. The reservoir is located approximately 62 miles south of Lake Berryessa and is owned and operated for water resources by the EBMUD. The recreation activities are managed under contract with Urban Parks Concessionaires. The reservoir has 834 water surface acres and has a water surface elevation of 305 feet above sea level. EBMUD owns an additional 8,376 land acres surrounding the reservoir. Recreation-related activities and services include picnicking, fishing, kayaking/canoeing, hiking, wildlife viewing, boat ramp, boat rentals, marina, gift shop, restaurant, play area, and facilities for group events, weddings and meetings. The trail system includes Inspiration Trail (0.6 miles), Eagles Nest Trail (1.0 miles), and different sections of the Old San Pablo Trail (5.4 miles). At the south end of the reservoir, the Old San Pablo Trail connects to approximately 14 miles of interconnecting trails that circumvent Briones Reservoir to the east that is also owned and managed by EBMUD.

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Chapter 4
Recommended Commercial Facilities and Services

An important observation can be made about the shifting recreation participation levels over the last several years. The economic situation finds U.S. residents in and out of recession and adjusting to it through shifting markets for labor, housing, and other services and goods. As more land is developed and converted from natural conditions, as climate change progresses, and as more demands are placed on our public lands, our environmental conditions will shift in response (Cordell, 2012).

Historically, public access to Lake Berryessa has been constrained by the existence of private exclusive use trailers and the lack of traditional outdoor recreation public use facilities. This has affected visitation which, given the population in the market area, would be significant. Also, the public is willing to pay for adequate, clean and safe recreational facilities that could be managed by an on-site presence or self-administered by Reclamation or concession operator.

Lake Berryessa has a special rural market niche that is distinctly different than the highly developed, urbanized and intensively managed water-based recreation areas found in the San Francisco Bay and Sacramento-San Joaquin Delta areas. Lake Berryessa is in a rural setting accessed by a 2-lane highway of some distance from major population centers. The lake has a State of California wildlife area to the east and south and a wilderness area to the northwest. There is a mountain range to the west that is located on the edge of Napa Valley wine country. Lastly, Lake Berryessa is unique because development is modest and occasional, and not every cove is occupied and developed. The area provides a high level of serenity, quietness, solitude, and the opportunity to experience and enjoy wildlife, fisheries, forests, open space, coves, and vistas. This may be a unique and special niche worth maintaining through careful development, and thus create a market demand.

Adaptive development should be a basic development principle for Lake Berryessa once new facilities have been developed. Given the unknowns regarding future recreation demand and the need for economic profitability, the type and amount of recreation use at Lake Berryessa should be monitored closely, both public and private facilities, in order to help make decisions about when additional facilities should be added after the new areas are open for public use.

The public need for the recommended facilities and services were based on sound professional judgment, conceptual site plan designs, infrastructure designs and results of the FFE. Refer to Figure 1-4 for the overall concession concept planning process that was followed in preparing this Market Assessment.

> Sound professional judgment results in a reasonable decision that has given full and fair consideration to all available information, that is based upon principled and reasoned analysis and the best available science and expertise, and that complies with applicable laws.

This chapter discusses (1) assumptions, (2) key factors influencing the recommendations, (3) opportunities, constraints and solutions, (4) projected future recreation demand, (5) recreation facility and services recommendations, and (6) terms of concession contracts.

4.1 Assumptions

The recommendations for commercial facilities and services development at Lake Berryessa are based upon the assumptions listed below:

- Reclamation's concession management objectives will continue to support traditional, short-term, and diverse outdoor recreation opportunities that are compatible with the Lake Berryessa RAMP and VSP.
- If future demand warrants substantial new development at Lake Berryessa, it may be necessary to look at additional sites other than the five areas discussed in this Market Assessment.
- Reclamation and concessionaires will actively market the newly developed facilities and services and collaborate with local tourism entities to attract new and past visitors to Lake Berryessa.
- Reclamation would only accept incoming concessionaires willing to implement an approved business plan that would sustain a viable business venture on a long term basis.
- The lost visitation due to the recent marina closures and trailer removals can be reclaimed in 5-10 years after the construction of new and high quality recreation facilities.
- The existing and available information used in this Market Assessment is of sufficient quantity and quality to make reasonable future projections.

- The construction of high quality recreation facilities and services will encourage return visits, increase the financial viability of commercial operators, and maintain and/or improve visitor satisfaction and user expectations.

- Reclamation will have adequate management resources (i.e. staff, boats, equipment, programs, partnerships, and monitoring capabilities) to ensure the public health, safety and enjoyment of the visiting public and that the natural and cultural resources are conserved and managed in a sustainable fashion. Without a strong and visible public agency presence, the quality of the recreation opportunities and resources will erode and the public will be displaced to other recreation settings.

4.2 Key Factors Influencing Recommendations

The integrity of this Market Assessment was based upon a level 1 analysis[21] of existing information, local expert opinions and sound professional judgment. The amount of available information considered was voluminous but there were several key factors or considerations that heavily influenced the recommended commercial facilities and services at Lake Berryessa. The key influential factors discussed previously in this Market Assessment include the following:

- Projected county population increases within the 25 county market area and Central Valley.

- Compliance with the provisions of the VSP.

- National and State of California increases (trends) in the participation of selected outdoor recreation activities that can be provided at Lake Berryessa.

- Observations made amongst the comparable recreation areas within the vicinity of Lake Berryessa.

- Higher than normal income levels of residents within the market area to support the development of quality facilities and services.

- Public need for outdoor recreation activities identified by the California Department of Parks and Recreation.

[21] A three-level sliding-scale of analysis is commonly used in the outdoor recreation profession. The key distinction between a level 1 versus a level 2 or 3 is the reliance upon existing information and expert opinion, rather than original data collection efforts and advanced mathematical formulas. More details are provided in Reclamation's *Estimating Future Recreation Demand: A Decision Guide for the Practitioner (January 2007).*

- Alternative camping options (e.g., cabins, park models, yurts, floating campsites) and their benefit to increasing recreation participation throughout the calendar year.
- Public participation and trends in recreational boating in California.
- The ability to provide services such as increased security and oversight that can mitigate pass problems (i.e., vandalism, partying) and thus attract disenfranchised and displaced visitors.
- Volume of unmet demand that can be satisfied with the development of quality recreation facilities and services that appeal to potential visitors with varied levels of income and demographic profile.
- Demand for high quality rural type recreation opportunities that are close to home (i.e., within the market area).
- Projections for many water-based activities that show increases over population growth through the year 2050.
- Projections that developed land activities, such as camping and family gatherings, are expected to increase at a rate greater than population growth through 2050.
- Projections that non-consumptive wildlife activities, such as birdwatching, photography, and other types of wildlife viewing, are expected to increase more than the population growth through the year 2050.

4.3 Opportunities, Constraints, and Solutions

There are opportunities at Lake Berryessa that can reverse any downward trends in the quality of facilities and services that were provided previously, enhance the visitor's outdoor recreation experience and meet future demand. This section identifies the major opportunities, constraints and solutions to mitigate identified constraints.

4.3.1 Opportunities

There are opportunities to:

- Establish facilities and services that are consistent with Reclamation's VSP ROD, other planning documents, concession directives, standards, and policy, as well as studies that are specific to Lake Berryessa.

- Establish facilities and services that provide families and friends an opportunity to get away from the many urban settings typical in California but especially within the Bay Area.

- Change the perception that Lake Berryessa is a congested and overcrowded "party lake" by marketing the lake as a safe and desirable recreation destination.

- Cooperate with Napa County in packaging and marketing the many quality outdoor recreation opportunities that are available within the county.

- Leverage the proximity of Napa Valley and its substantial visitor base when marketing Lake Berryessa to residents within the market area and potential tourists from outside the market area.

- Provide recreation areas where visitors can enjoy the sights, sounds, solitude and tranquility of Lake Berryessa, which is largely defined by its water resource, fishery, aesthetics, and surrounding wildlife areas, wilderness, and forests.

- Provide commercial operations that offer only necessary and appropriate facilities and services that are financially profitable.

- Fill a void in the limited quantity of overnight camping facilities (i.e., tent, standard and RV sites) that are currently being offered by 3 of the primary recreation providers in the Bay Area (i.e., EBRPD, EBMUD and NPS).

- Offer Napa Valley visitors alternative overnight lodging options at Lake Berryessa such as yurts, tent cabins, cabins and park models. These unique and quality lodging units would typically be less expensive than existing lodging options within Napa Valley.

- Establish facilities and services that are competitive with other recreation areas within the marketplace.

- Provide facilities and services that support public participation in numerous recreation activities on a year-round basis.

- Provide facilities and services that will disperse users to different areas and potentially reduce overcrowding and user conflicts.

- Provide facilities and services that are visually appealing and harmonious in form, color, and texture with the surrounding landscape.

- Provide high quality rural type recreation opportunities that provide visitors with opportunities to experience and enjoy the natural resource-based landscape.
- Establish a recreation development strategy that may accommodate future demand through the provision of monitoring and phased development.
- Allow Reclamation to consider recreation capacity limits and recreation experiences for a diverse group of recreation users when authorizing additional facilities and services over time.
- Develop and market Lake Berryessa in a unique and special way that appeals to the large population base in the market area.
- Provide local communities surrounding Lake Berryessa with an opportunity to enjoy the recreation opportunities in their own backyard.

4.3.2 Constraints and Solutions

During the preparation of the Market Assessment and review of existing reports, studies and literature, there were several constraints identified at Lake Berryessa that might interfere with providing certain facilities and services in specific locations. Specifically, the VSP FEIS was reviewed to determine if the facility developments contemplated in the VSP would negatively impact the environmental resources and potentially prevent or alter recreation development. The impacts that were identified in the FEIS would be minimal and temporary. However, there are certain challenging factors that will have to be addressed in the planning and construction phases. In response to the identified constraints, possible solutions have been provided immediately following the constraint.

Constraint 1

<u>Slopes greater than 10 percent</u>: The chief constraint for recreation development at Lake Berryessa is related to the steepness of the terrain and the resulting potential for erosion. If possible, roads, facilities and campgrounds should not be constructed on slopes greater than 10 percent. There are however, numerous construction practices that can significantly reduce erosion of moderately steep slopes.

Solution 1

Extra care should be taken during the campground conceptual design phase to identify potential locations that are compatible with the placement of clusters of different types of campsites. In some areas, creative construction methods can be used such as constructed level tent pads or rustic cabins, yurts or tent cabins that are constructed on pillars. Refer to Figure 2-4 in Chapter 2 for an example of a yurt that is constructed on a slope that is greater than 10 percent. Campsites may be hardened in areas that have potential for erosion. In some instances, retaining walls/barriers may be constructed along the shoreline to curtail bank erosion due to heavy recreation use.

Constraint 2

Linear land configuration: There may be potential problems in getting a quality campground layout due to the linear shape of lands within certain concession area boundaries (i.e., there is a limited buffer area between the shoreline and the outer concession boundary that may preclude the development of typical one-way campground loops). Additionally, the linear shape of lands may preclude the development of parking areas for marinas and boat ramps or the expansion of these facilities in the future.

Solution 2

Use GIS spatial applications in identifying physical constraints to any type of development such as campgrounds and parking lots. Alternative types of campground layouts can be considered during the design phase other than the typical round loop design (i.e., peanut or hotdog shaped loops that will normally accommodate fewer campsites per loop).

Constraint 3

Authorized Solano Project Purposes: Seasonal fluctuations in water elevation due to water releases for irrigation, municipal, and industrial users could be a constraint to the operation and maintenance of a marina complex. Drought conditions and future climate change scenarios could further constrain a marina operation if significantly more water is needed for Project purposes. Additionally, if there is severe drawdown of the reservoir, the physical space that is available for a marina complex is decreased. This may preclude future expansion efforts.

Solution 3

All marinas should be located in areas providing sufficient water depth to allow for vertical adjustment of the marina to meet annual fluctuations of the lake level. Marinas should only be located in areas that have a sufficient water surface area that will accommodate future expansion and be usable during severe drawdown periods. In addition, reasonable access to all visitors and compliance with an approved business plan are parameters that should also be followed.

Constraint 4

Carrying capacity: Carrying capacity can be described as (1) the impacts that users have on one another, (2) the area that is available to a recreationists for a specific activity, (3) the effects that a level of recreation use has on the environment, and (4) the ability of a facility to accommodate the current level of use. It is likely that carrying capacity thresholds will be reached at some point and may constrain future development of facilities and services contemplated in this Market Assessment.

Solution 4

Proper site planning, site-specific NEPA compliance, and use of Geographic Information System mapping can help identify potential carrying capacity issues. Monitoring of visitor use patterns, visitor conflicts, and conducting visitor satisfaction surveys can help assist in determining whether carrying capacity is a constraint to future recreation development.

4.4 Projected Future Recreation Demand

This section provides the estimated future recreation demand for several key facilities and services associated with Lake Berryessa. This section does not provide quantities for all the specific recreation components that might be developed at the five recreation areas. A comprehensive list of recommended facilities and services, support components, and quantities are detailed later in this chapter.

The demand estimates are based upon a 30-year planning horizon to coincide with the expected duration of any new concession contract. The planning horizon begins in 2014 and extends to 2043. These estimates are not intended to be a static, one-time estimates for the full 30-year period, but rather are expected to be adapted and recalibrated over time with new information and changing circumstances.

In this Market Assessment, a scale was used to estimate future recreation demand from the current levels. This approach is consistent with a level 1 analysis where the precision of estimates to a specific whole number or decimal level is not realistic. Thus, the scale reflects a "range" for the estimated future demand from today's level (i.e., low = 0-40 percent increase; moderate = 41-80 percent increase; high = 81-120 percent increase; and very high = 121 percent increase and above). Table 4-1 below provides the existing supply of the key facilities and services and the projected supply that will be needed in 2043 for Lake Berryessa as a whole. The projected numbers for the most part have been rounded. **Note**: The table below includes all the facilities and services that are currently being offered at Markley's Cove, Pleasure Cove, Spanish Flat, Steele Canyon, and Putah Canyon recreation areas. Except for Pleasure Cove and Markley's Cove, the facilities and services existing at the remaining 5 recreation areas will be replaced or upgraded, as appropriate.

Table 4-1. Projected Quantities of Key Facilities and Services Needed at Lake Berryessa from the Base Year of 2014 to 2043

Types of Facilities and Services	Existing Supply (Quantities)	Projected Future Increase (Demand) from Existing Supply[1]	Projected Supply of Facilities and Services needed through 2043[2]
Marinas	2	Very high (150%)	5
Boat slips (wet)	539	High (110%)	1,100
Boat storage slips (dry)	65	Very high (400%)	325[3]
Houseboats	64	High (120%)	140
Restaurant/retail goods and supplies	2	High (100%)	4
Public boat launch ramps	5	Moderate (50%)	7[4]
Campsites	363	High (100%)	726
Picnic day use sites	250	Low (40%)	350
Park models	0	n/a	50[5]

Notes:
[1] Number in parentheses is the percentage factor used to estimate the quantity of facilities recommended at Lake Berryessa. Percentage is based on market supply and demand data presented in previous chapters and professional judgment.
[2] Projected supply is calculated based on existing supply and percentage factor for demand. Numbers are rounded.
[3] A portion of dry storage units projected in this table can be provided on lands under the jurisdiction of Reclamation. However, the overall demand for dry storage units in the Lake Berryessa area should be accommodated by existing and/or future commercial dry storage businesses off of Reclamation lands.
[4] Number of ramps includes one each for Markley's Cove, Pleasure Cove, Steele Canyon, Spanish Flat, Berryessa Point, Monticello Shores and one at Putah Canyon.
[5] The projected number of park models is based on a market assessment conducted by PKF Consulting USA as discussed below.

This Market Assessment did not assess the demand for the development of a hotel complex at Lake Berryessa. Concurrent with the preparation of this Market Assessment, Napa County, Community and Intergovernmental Affairs Office, independently commissioned a study to determine the potential market demand and financial feasibility for developing a traditional or "stick-built" hotel at the lake. The study determined that the development of this type of facility would not be financially feasible due to, among other things, the seasonal level of demand that would be expected due to the lake's relative remote location from Napa Valley. However, the study did determine that a pre-manufactured "park model" type lodging facility would be viable. Based on the Napa County study and the evaluation of the feasibility of alternative camping, such as park models, cabins, yurts, floating campsites, and tent cabins in this Market Assessment, it was concluded that park models are viable lodging alternatives that should be developed at Lake Berryessa. Appendix A includes Napa County's final report, *Potential Market Demand and Financial Feasibility Proposed Hotel – Lake Berryessa, CA* (2013).

Figure 4-1. Park Model Example.

4.5 Recreation Facility and Service Recommendations

This section identifies the recommended ***required*** and ***authorized*** facilities and services that should be allocated to each of the five separate recreation areas covered by this Market Assessment (i.e., Steele Canyon, Spanish Flat, Berryessa Point, Monticello Shores, and Putah Canyon). The recommendations are based on the market research described in previous chapters to determine the full quantity of services that should be provided at the lake. The facilities and services recommended in this chapter:

- Meet Reclamation's objective of expanding recreation management at Lake Berryessa to better serve the visiting public and to maximize the financial feasibility of developments.
- Allow a concessionaire to make a reasonable profit over the life of the concession contract.
- Support short-term, traditional, non-exclusive, and diverse recreation opportunities at the lake.
- Are typical components of a recreation complex such as a marina or campground.
- Take into consideration the opportunities and key factors listed above.

Lake Berryessa has gone through a transformation like few lakes have witnessed in such a short time. The removal of the shoreline private exclusive use trailers and several marinas following the expiration of the original concession contracts in 2008/2009 had a significant impact on the visitation at Lake Berryessa. As documented in Chapter 2, visitation decreased substantially from pre 2008/2009 levels. It is difficult to judge how quickly visitation will return.

The ***required*** facilities and services recommended below would be developed at the five recreation areas first to accommodate existing demand identified in this Market Assessment followed by the development of the recommended ***authorized*** facilities and services at some point during the term of the concession contract. The recommended authorized facilities and services would be developed based on future demand and other relevant factors deemed appropriate by Reclamation. This development approach allows a concessionaire to first construct the most financially feasible facilities and services that meet current demand and the support components that make the development(s) a functional unit. Since the construction of authorized facilities and services is a business decision that will be made by a concessionaire, those facilities and services may be constructed at any time during the concession contract upon approval by Reclamation.

If appropriate, the timeframes for development of facilities and services and support components by a concessionaire would be described in the RFP and incorporated into the contract between the concessionaire(s) and Reclamation.

It is important to consider the cumulative impact to recreation demand that would result from the construction of the recommended required and authorized facilities and services. Therefore, the final quantities that are recommended for the 30-year planning horizon mentioned above also take into consideration the existing quantities at Pleasure Cove and Markley Cove and the quantities projected for 2043 for the entire lake. Refer to Table 4-1 for the quantities of key facilities and services that are currently available at Lake Berryessa.

4.5.1 Overview of Common Marina and Campground Components

The marina and campground complexes recommended are considered gateways to the outdoors. They are the primary places most visitors will go to begin their stay at Lake Berryessa. The listed facilities and services and accompanying components will meet existing and future demand, be enjoyed by the public on a year-round basis, add diversity to available opportunities, and support visitor participation in the key recreation activities that are and will be popular in the United States and California for the foreseeable future.

Some level of water-based and/or land-based facilities and services would be provided at the five recreation areas. All facilities will be of high quality and well placed for visual, circulation and functional purposes. Each recreation area shall contain an ample road network, information and directional signing, appropriate number of comfort stations with and without showers, low intensity lighting where necessary for safety and aesthetic purposes, and utilities and trash receptacles in various combinations and locations. Pursuant to accessibility laws and regulations, an appropriate number of handicapped accessible facilities shall be provided at both land-based and water-based sites.

Figure 4-2. Handicap Accessible Campsite Example.

Except of Berryessa Point, each recreation area will have a properly constructed entry station located an appropriate distance from the main road in order to safely accommodate the influx of visitors during peak use periods. In lieu of an entry station, an iron ranger[22] will be located at the entry road to Berryessa Point Recreation Area.

Figure 4-3. Entry Station Example.

[22] An iron ranger can best be described as a unattended secure honesty box or metal container that is placed at a convenient entry location. It is a method of charging for a service such as admission to a campground or use of a facility such as a boat ramp. It relies upon each visitor paying a specified amount of money using the honor system. Such sites are unmanned at the time of entry.

Figure 4-4. Iron Ranger Example.

In order to provide a quality recreation experience for visitors, the location of facilities will take advantage of topography and vegetative screening when possible to shield users from the sights and sounds of others. To the extent possible, day use and overnight sites will be located in areas that provide scenic views of the lake as well as easy access to and from the lake.

Due to the excessive slopes along the lake shoreline, day use and campground sites should be hardened to prevent erosion and site degradation when appropriate. Common materials used to harden sites are marble dust, small gravel or concrete. When necessary, retaining walls/barriers will be installed for public safety purposes and to prevent bank erosion in high public use areas.

All marinas should be located in areas that provide adequate water depth to (1) accommodate annual fluctuations in the lake level, (2) sufficient land area to accommodate support facilities such as parking and, (3) sufficient water surface area to allow for expansion of the marina complex based on demand and other important factors deemed appropriate.

For security purposes and the health and safety of visitors, an appropriate level of onsite security personnel will be provided at each recreation area. An appropriate number of camp hosts will be provided by the concessionaire(s) to provide additional oversight, serve as a contact for visitors, and perform certain designated tasks.

Trail connections to the Lake Berryessa Shoreline Trail system will be provided at each of the five recreation areas. For the most part, the trail route within each recreation area will follow existing roadways and the shoreline as much as possible. The trail route within the respective recreation areas will be marked accordingly to allow trail users to find their way.

There are various types and quantities of required and authorized facilities and services that would be developed at the five recreation areas over the term of the concession contract. Refer to Table 4-2 for a description of the facilities and services that are discussed in this section. The specific quantities of facilities and services for each respective recreation area are provided later in this chapter. More detailed information on the facilities and services and support components can be found in Reclamation's *Conceptual Site Plans and Report* and *Conceptual Infrastructure Design Plans and Report, Lake Berryessa Concession Concept Plans*.

Table 4-2. Description of Facilities and Services to be Provided at Lake Berryessa Recreation Areas

Facility/Service	Description
Camping	
Tent Site	Tent only sites are required to have a picnic table and fire pit. A tent site can be with or without a 12-ft x 12-ft elevated (max 18-in) level pad, All tent sites are spaced a minimum of 75-ft apart as measured between living areas.. A parking space and water spigot are nearby. *Authorized services* include 1 parking space at the tent sites.
Overnight Group Use Area	Area identified for temporary clustered tent only sites with a central group area with several picnic tables and fire pits. Size varies to accommodate 20-50 people. Parking is nearby. *Authorized services* include an upright barbeque (BBQ) and an additional parking space.
RV Site	RV sites are required to have a picnic table and fire pit, and are required to have water, sewer, and electric hook ups. Sites are typically 1,800 to 2,200 square ft for most RV parking spaces and 2,800 to 3,200 square ft for larger accessible double unit RV parking spaces. *Authorized services* include an upright BBQ.
Standard Site	Standard sites can serve tents, vehicles with trailers, or RVs and are required to have the following: a picnic table, a fire pit, parking for one trailer and car. Sites can be pull-through or back in. Water, sewer, and electric hook ups are required at some standard sites, as shown on the site plans. Sites are typically 1,800 to 2,200 square ft for most combined trailer/tent site parking spaces and 2,800 to 3,200 square ft for larger accessible double unit combined trailer/tent site parking spaces and generally 100-ft long x about 30-ft wide for pull-through campsite parking spaces. Water spigot is nearby. A*uthorize*d services include utility hookups for all standard sites and an upright BBQ.
Hike-in/Boat-in Tent Only Site *(Authorized Service Only)*	Tent-only sites accessible only via hiking or boat-in. Each site includes a picnic table and fire pit. Sites are typically 100-ft apart. Water spigot nearby. No designated parking space. Sites are near the shoreline where boat can be anchored to a mooring.
Floating Campsite *(Authorized Service Only)*	Campsites on water spaced about 400-ft apart. These sites accommodate up to 15 people and have a table, propane barbecue grill, food locker, accessible restroom, covered living area and an upper sun deck/sleeping area with room for tents. Typically 20x24 ft. Drinking water must be brought in by visitors.

Table 4-2. Description of Facilities and Services to be Provided at Lake Berryessa Recreation Areas

Facility/Service	Description
Lodging	
Cabins	Overnight structure, constructed on-site, set on a foundation or otherwise permanently placed. Site about 2,500 square ft or more. Cabins are above the 455 ft contour. Cabin includes restroom, sink, stove, table, sitting area, and one or two beds. Daily housekeeping service is provided. Required units sleep up to 4 adults. Picnic table and fire pit are located outside. Includes water, sewer, and electric hookups and one parking space. *Authorized services* include an additional parking space, upright BBQ, additional furniture and amenities, or larger cabins that sleep more.
Park Models	Movable structure designed for long-term or semi-permanent placement. Since they are movable, they are typically located in areas between the 440 and 455 ft contours, and in the 100-ft buffer zone above the 455 ft contour. Park models must remain under 400 square ft for transport and to be defined as a recreation vehicle, not a manufactured home. Site is about 2,500 square ft or more. Park model includes restroom, sink, stove, table, sitting area, and one or two beds. Daily housekeeping service is provided. Required units sleep up to 4 adults. Picnic table and fire pit are located outside. Includes water, sewer, and electric hookups and one parking space. *Authorized services* include an additional parking space, upright BBQ, additional furniture and amenities, or larger park models that sleep more above the 455 ft contour.
Yurts	Round, semi-permanent, tent-like structure. Consists of a durable fabric, tension band, and a wood frame set upon a platform. Site about 2,500 square ft or more. Yurts are above the 455 ft contour. Yurts include basic furniture, including cots or bunk beds, shelf with drawers, table, and couch. Housekeeping is not provided as a daily service. Picnic table and firepit are located outside. Sleeps up to 4 adults. No sewer, water, or electric hookups. Water spigot and comfort stations nearby. One required parking space is located near the structure. *Authorized services* include an additional parking space, upright BBQ, additional furniture and amenities, housekeeping service, and water, sewer, and electric hookups.
Rustic Cabins	Constructed on-site, set on a foundation or otherwise permanently placed. Site about 2,500 square ft or more. Rustic cabins are above the 455 ft contour. Includes cots or bunk beds and a shelf for some storage. Housekeeping is not provided as a daily service. Sleeps up to 4 adults. Picnic table and firepit located outside. No sewer, water, or electric hookups. Water spigot and comfort stations nearby. One required parking space is located near the structure. *Authorized services* include an additional parking space and upright BBQ.
Tent Cabins	Constructed of wood and canvas. Site about 2,500 square ft or more. Tent cabins are above the 455 ft contour. Includes cots or bunk beds. Picnic table and firepit located outside. Sleeps up to 4 adults. No sewer, water, or electric. Water spigot and comfort stations nearby. One required parking space is located near the structure. *Authorized services* include an additional parking space and upright BBQ.

Table 4-2. Description of Facilities and Services to be Provided at Lake Berryessa Recreation Areas

Facility/Service	Description
Boating	
Marina	Marina building includes cashier with service desk, waiting area with benches and tables, and restrooms. The marina building can be constructed on ground or be floating. The marina building can be combined with a restaurant and retail sales. If on ground, accessibility can be provided by a lift service. An accessible 12 ft wide gangway is an *authorized service*. Per the LDGMGF, the parking requirement is 0.6 parking spaces per boat slip. The marina parking lot is close to the marina building. Marina building and services are required at Putah Canyon, Steele Canyon, and Spanish Flat. Marina is an *authorized service* at Monticello Shores and Berryessa Point. At Putah Canyon, the marina is a 1,200-square ft floating marina and is combined with the required restaurant and retail service. At Steele Canyon the marina building is on ground and combined with the required retail service in a 3,150-square ft building.
Primary and Secondary Boat Docks	The primary dock is a 12-ft wide dock from the marina to the secondary docks with the individual boat slips. The secondary docks are less than 300 ft long and are 8-ft wide. The boat slips are accessed from the secondary docks. *Authorized services* include electrical service for public use from the primary boat dock and water spigots located about every 200-ft along the dock for use by boaters.
Boat Slip	Boat slips are uncovered and accommodate various sizes of boats for both private boats and boat rentals. Each slip is off of an 8-ft wide secondary dock or the 12-ft wide primary dock. The finger floats of the boat slips are 2-ft wide and are 20-ft long for standard boats and 40-ft long for houseboats. The slips are located assuming a reservoir low water elevation of 400 ft so that a minimum water depth of 9-ft remains underneath each slip during low water conditions. *Authorized services* include covered boat slips and water spigots at each boat slip.
Boat Rental	Boat rental service desk is located in the marina building or in a small structure near the boat ramp, depending on the type of boats or watercraft available for rent. Boat rentals are a required service at Putah Canyon, Monticello Shores, Spanish Flat, and Steele Canyon. Fuel storage and dispenser are a required service where boat rentals are available. *Authorized services* include additional kayaks, canoes, paddle boats, and paddle boards.
Boat Launch, Vehicle and Boat Trailer Parking and Kiosk	Boat launches are single or multi-lane with courtesy docks per two lanes. Boat launch ramps are required at all five recreation areas and in the same locations as existing launches. Each lane is 15-ft wide minimum. Information kiosk, fish cleaning station, and a comfort station are located nearby. Boat trailer parking lots have 30-ft wide two-way access on either side of parking spaces. Parking spaces are 12-ft wide x 55-ft long minimum for cars with trailers. Majority of boat trailer parking is within 600-ft of top of launching ramp. An *authorized service* is an extension of the boat launch at Spanish Flat to accommodate lower water levels.
Fish Cleaning Station	Includes a 20-ft x 20-ft roof for shade and shelter, a pre-manufactured 96-in x 60-in cutting table with sink and pre-rinse water supply, electrical service for lights and outlets for automatic cutting utensils, and automatic disposer leading to a sewer connection for fish carcasses. Table is positioned in the center of a 22-ft x 22-ft concrete pad with 5-ft clear accessible space provided all around the table.

Table 4-2. Description of Facilities and Services to be Provided at Lake Berryessa Recreation Areas

Facility/Service	Description
Courtesy dock	Movable dock, typically 6-ft wide x 50-ft long that is part of a boat launch ramp for loading and unloading, and to mark launching lanes on the ramp.
Boat Exclusion Area	Buoys are used to identify areas where boaters are prohibited from entering.
Day Use	
Individual Day Use Site	Individual site with a picnic table and upright BBQ. A parking lot is nearby to service multiple individual day use sites. Comfort station and water spigot are nearby.
Group Day Use Area	Large sites, typically with a group shelter with multiple picnic tables, table and sink, and a larger upright BBQ to accommodate groups of 20 or 50 people. Includes water hookup.
Playground	Site includes varied children's playground equipment with safety surfacing. Playground area and infrastructure are accessible.
Open Space/Recreation Area	Open area near an accessible playground that generally includes various recreation options, such as recreation courts, bocce ball, tennis, basketball, or volleyball.
Trail Connection	A trail connection is an identified location where trails are anticipated to eventually connect. There is a sign and parking nearby.
Multi-Use Special Events Center *(Authorized Service Only)*	Large building for special day-use events, such as seminars, conferences, school group gatherings, reunions, weddings, retreats, etc. Includes central reception area, kitchen, restrooms, storage room, and additional small conference rooms. Assumes total occupancy for approximately 100 people and parking for approximately 50 cars (Napa County Zoning Code of Ordinances requires 0.5 parking spaces per person for 'conference center'). Approximately 3,050 square ft.
Lake	
Lake Access	Area where campers and day users can access the lake.
Amenities	
Restaurant	Restaurant services are required at Putah Canyon and Steele Canyon and authorized at Monticello Shores, Berryessa Point, and Spanish Flat. Restaurants may offer varying levels of food service, such as sit-down/full service or fast-casual/take-out, such as a sandwich counter, small café, or grill. Full-service restaurant sizes may vary and serve up to 40 customers. Serving beer, wine, and/or liquor is an *authorized service*. At Putah Canyon, the required restaurant is in the floating marina and is a take-out counter with sandwiches, salads, or other café items. An *authorized* use is seasonal operation of the restaurant. At Steele Canyon, the required restaurant is separate from the marina building and assumes about 20 customers at 2,592-square ft. Additional seating can be located outside on a deck. About 22 parking spaces are needed per Napa County Zoning Code of Ordinances requires 1 parking space per 120-square ft of building. At Monticello Shores, Berryessa Point, and Spanish Flat, the *authorized* restaurant is a take-out sandwich shop/grill in a separate building or located in the marina service building that can be operated seasonally or year-round.

Table 4-2. Description of Facilities and Services to be Provided at Lake Berryessa Recreation Areas

Facility/Service	Description
Retail Store	Retail building and service selling food snacks, ice, beverages, recreation supplies, wood, or other items for camping and boating activities. Retail can be combined with the marina building or a restaurant. At Putah Canyon, the retail store is combined with the marina portion of the building, and assumes about 30% of the 1,200 square ft structure. Napa County Zoning Code of Ordinances requires 1 parking space per 250-square ft of retail. At Steele Canyon, the retail store is combined with the marina building, and assumes about 30% of the 3,150-square ft structure. About 4 parking spaces are needed per requirements of 1 parking space per 250-square ft of retail. Retail is an *authorized service* at Monticello Shores, Berryessa Point, and Spanish Flat.
Facilities/ Infrastructure	
Entry Station	Small building located at vehicle entrance to recreation area for visitor registration, fee collection, etc. At least 2 entry lanes and one exit lane. Setback a minimum of 150-ft. off Knoxville Road or main public right-of-way. Includes 2 parking spaces, one of which is a van-accessible parking space with access to the entry station. Vehicle turnaround space is typically identified for vehicles to immediately exit. The station building is approximately 52 square ft. Figure A-1a per RRFDG (see Appendix B). A self service fee depository is also included at the entry station area. Approximately 25-square ft. *Authorized services* are a gate and one-way spike strips.
Restroom	At all sites, men's and women's restrooms are located inside buildings that have other uses (such as the marina, concessionaire offices, multi-purpose building, restaurants, and single building retail stores), and are open during normal business hours. All restrooms are accessible with toilet stalls, sinks, soap dispenser, towel dispenser or hand dryer, and waste receptacle.
Vault Toilet	Prefabricated, accessible 2-unit vault toilet buildings are typically located in areas that do not have underground water service or sewer. Use of sweet-smelling technology. Building footprint is approximately 250 square ft. An *authorized service* is electric hookup and replacing vault toilets with comfort stations with toilets only.
Comfort Station with Toilets only	Accessible restroom typically located where campers are not anticipated to use them. Each has water, sewer, and electric hookups. Building footprint is approximately 700 square ft. Referred to as comfort station #1 later in this chapter.
Comfort Station with Toilets and Family Room only	Accessible restroom typically located in or near camp site areas. Each has water, sewer and electric. One dish washing sink is included. Building footprint is approximately 925 square ft. An authorized service is comfort station with toilets, family room, and showers only. Referred to as comfort station #2 later in this chapter.
Comfort Station with Toilets, Family Room and Showers only	Accessible restroom typically located in or near camp site areas. Each has water, sewer, and electric and accessible shower stalls. One dish washing sink is included. Building footprint is approximately 925 square ft. Referred to as comfort station #3 later in this chapter.

Table 4-2. Description of Facilities and Services to be Provided at Lake Berryessa Recreation Areas

Facility/Service	Description
Comfort Station with Toilets, Family Room, Showers and Laundry	Accessible restroom typically located in or near campsite areas. Each has full water, sewer, and electric, accessible shower stalls, and laundry facility including washer and drier units, folding tables, vending machines. Building footprint is approximately 1,100 square ft. One dish washing sink is included. Laundry is only provided at Putah Canyon and Steele Canyon. Referred to as comfort station #4 later in this chapter.
Fuel and/or Sanitary Dock and Land Based Storage Facility	A dock for fuel dispensing and sanitary waste collection is provided off of the boat dock. The fuel and sanitary service dock typically serves a minimum of 2 boats at a time per Reclamation's Recreation Facility Design Guidelines. Storage tanks for bulk fuel and collected sanitary waste are located at a nearby land based storage facility on the shoreline near the gangway to the dock. Footprint size of the pad for both storage tanks is about 30-ft x 40-ft. These tanks are accessed by fuel and sanitary trucks. The tanks are located together and included as one service. Sanitary services are only required where houseboats are used at Putah Canyon and Steele Canyon. Monticello Shores and Spanish Flat have only a fuel dispenser and a fuel storage.
RV Dump Station	Includes an area for disposal of stored sewage, a water source to flush sewage holding tanks, and separate potable water source. Pull through space for RVs.
Small Boat Repair/ Yard Shop	Building and service yard area for boat repairs. Where marinas are located, the building is combined with a tow service. At Steele Canyon and Putah Canyon, these are buildings with nearby service yard for maintenance, repairs, and storage.
Concessionaire Office	Building or park model-structure for supervisor, administrative, and maintenance personnel.
Dry Boat Storage	At Steel Canyon, two separate 4-story, 3 sided buildings, each with a sloped roof provide storage space for about 100 stacked boats. A fork-lift operation will move boats. An *authorized service* is a fully enclosed building. At Putah Canyon, an open land area is provided that will store a grouping of about 20-30 boats on trailers. A tractor with universal boat trailer operation will move boats.
Camp Host Site	An RV site or a standard site with full hookups, picnic table, and fire pit. An upright BBQ is an authorized service. At Berryessa Point, the camp host site has water and electric hookup only.
Employee Housing	Multiple park models to house seasonal or permanent employees. At Steele Canyon, there are 10 park models. Employee housing is an *authorized service* at Putah Canyon with 6 park models.
Parking and Access	
Vehicle Parking, Access and Walkways	Vehicle parking space is a minimum of 10-ft x 20-ft. Pedestrian walkways are a minimum of 5-ft wide.
Vehicle with Boat Trailer Parking	Parking areas have 30-ft wide two-way drive lanes. Each parking space is 12-ft x 55-ft. per Reclamation's Recreation Facility Design Guidelines.
Access Drives	Primary access drives are generally designed for two-way traffic, 24-ft wide, with 20-ft wide lane and 2-ft wide shoulders on each side. Secondary access drives are generally for one-way traffic, 14-ft wide, with 12-ft wide lane and 1-ft wide shoulders on each side. Surface materials shall support legally loaded, non-permitted commercial vehicles and provide an all-weather driving surface. Road dimensions are required by SRA Fire Safe Regulations.

Following are the recommended facilities and services for each recreation area and the quantities required to meet existing demand and the anticipated authorized quantities that would be necessary to meet future demand and other factors with due consideration of the existing concession-operated areas. The recommendations are based on the market research described in this report that identifies the total unmet demand at Lake Berryessa. The conceptual site and infrastructure plans and FFE informed the location and distribution of facilities and services at each of the five recreation areas. The end of this section compares the total facilities and services at each recreation area to the unmet demand identified in Table 4-1.

4.5.2 Recommended Facilities and Services at Putah Canyon Recreation Area.

Putah Canyon Recreation Area would be developed as a marina and campground complex and include the appropriate number of support facilities and services to operate and maintain these types of developments (i.e., comfort stations, water spigots, trash receptacles, parking spaces). The required facilities and services will consist an entry station, overnight RV sites with utilities, standard sites without utilities, tent only sites, two entry stations, individual day use sites, a small dry boat storage area and a camp host site with utilities. Lodging facilities will consist of a limited number of park models. Sewer, power and water will be available on site. The required marina complex will consist of a floating marina building and service, concessionaire building, numerous boat slips, boat ramp with courtesy docks, fish cleaning station, watercraft rentals, boat fuel and septic pump out stations, on-shore fuel and sanitary storage tanks, restaurant and retail shop in the floating marina. Based on demand and other important factors, the authorized facilities and services will consist of upgrades of standard sites without utilities to standard sites with utilities, a playground, boat repair building, additional fish cleaning station, employee housing (park models), group day use area, 20 tent only sites *or* day use sites, vault toilet to serve tent or day use at the southern part of the recreation area, and access road gates. Table 4-3 presents a complete list of facilities and services and quantities for Putah Canyon Recreation Area.

Table 4-3. Required and Authorized Facilities and Services for Putah Canyon Recreation Area

Facilities/Services	Required	Authorized	Total
Camping			
Tent sites	22	20	42
Standard sites without utilities	19	0	19
Standard sites with utilities	0	0	0
RV sites with utilities	18	0	18
Camp host site with utilities	1	0	1
RV dump station	1	0	1
Playground and group area	0	1	1

Table 4-3. Required and Authorized Facilities and Services for Putah Canyon Recreation Area

Facilities/Services	Required	Authorized	Total
Lodging Services			
Park models	6	0	6
Boating Services			
Boat ramp launch lanes	7	0	7
Courtesy docks	4	0	4
Boat slips	201	0	201
Houseboat slips	15	0	15
Marina access dock/gangway	1	0	1
Kiosk (boat ramp information sign)	1	0	1
On-shore fuel and sanitary storage tank	1	0	1
Marine fuel dispenser and boat septic pump out station	1	0	1
Fish cleaning station	1	1	2
Employee housing (park models)	0	6	6
Houseboat rental	8	0	8
Fishing boat rental	6	0	6
Ski boat rental	6	0	6
Kayak/canoe rental	4	0	4
Paddle board rental	4	0	4
Jet ski rental	8	0	8
Deck cruiser/pontoon rental	8	0	8
Floating marina building and service	1	0	1
Concessionaire building/Yard shop/Tow service	1	0	1
Boat repair building	0	1	1
Dry storage yard for 30 units	1	0	1
Day Use Services			
Individual day use sites	31	20	51
Group day use area	0	1	1
Boat exclusion area	2	0	2
Kiosk (trail connection)	1	0	1
Restaurant Services			
Restaurant	1	0	1
Retail Services			
Retail store	1	0	1
Facilities			
Entry station	2	0	2
Entry station vault toilet	1	0	1

Table 4-3. Required and Authorized Facilities and Services for Putah Canyon Recreation Area

Facilities/Services	Required	Authorized	Total
Vault toilet	0	1	1
Comfort station, toilets only	4	0	4
Comfort station, toilets and family room	0	0	0
Comfort station, toilets, family room, showers[1]	0	1	1
Comfort station, toilets, family room, showers, laundry	1	0	1
Access road close gate	0	2	2

[1] Authorized comfort stations is an upgrade from a comfort station with toilets only to one with showers.

Figure 4-5. Park Model with Sleeping Loft Example.

4.5.3 Recommended Facilities and Services at Monticello Shores Recreation Area

Monticello Shores Recreation Area will be developed as a campground and marina complex and include the appropriate number of support facilities and services to operate and maintain these types of developments (i.e., comfort stations, vault toilets, water spigots, trash receptacles, parking spaces). The required facilities and services will consist of an entry station, tent only sites, standard sites with and without utilities, RV sites with utilities, camp host site with utilities, RV dump station and a limited number of day use sites. Lodging facilities include numerous park models and a limited number of yurts, rustic cabins and tent cabins. An on-shore boat rental building and fuel storage tank plus a limited number of watercraft rentals will also be required. Based on public demand and other important factors, authorized facilities and services will include upgrades of standard and RV sites without utilities to standard sites and RV sites with utilities (these would not be new sites), hike-in/boat-in campsites, floating campsites, overnight group use area, restaurant, vault toilet, and comfort stations. A small marina with boat slips and fuel station are also authorized. Refer to Table 4-4 for a complete list of facilities and services and quantities for Monticello Shores Recreation Area.

Table 4-4. Required and Authorized Facilities and Services for Monticello Shores Recreation Area

Facilities/Services	Required	Authorized	Total
Camping			
Tent sites	130	0	130
Standard sites without utilities	4	0	4
Standard sites with utilities	8	0	8
RV sites with utilities	21	0	21
Hike-in/Boat-in tent sites	0	20	20
Overnight group use area (50 person occupancy)	0	1	1
Camp host site with utilities	1	0	1
RV dump station	1	0	1
Lodging			
Park models	28	0	34
Cabins	9	0	9
Yurts	6	0	6
Rustic cabin	4	0	4
Tent cabins	5	0	5
Floating campsite	0	3	3
Boating			
Boat ramp launch lanes	2	0	2
Courtesy dock	1	0	1
Fish cleaning station	1	0	1
Boat slips	0	50	50
Kiosk (Boat ramp information sign)	1	0	1
Marina fuel dispenser	0	1	1
Kayak/canoe rental	20	0	20
Paddle board rental	10	0	10
Jet ski rental	6	0	6
On-shore boat rental building and fuel storage tank	1	0	0
Boat rental storage building	1	0	1
Marina (Floating marina and dock)	0	1	1

Table 4-4. Required and Authorized Facilities and Services for Monticello Shores Recreation Area

Facilities/Services	Required	Authorized	Total
Day Use			
Individual day use sites	8	0	8
Group day use site	0	1	1
Kiosk (trail connection)	1	0	1
Restaurant			
Restaurant	0	1	1
Retail			
Retail	0	1	1
Facilities			
Entry station	1	0	1
Entry station vault toilet	1	0	1
Vault toilet	9	0	9
Comfort station, toilets only[1]	0	1	1
Comfort station, toilets and family room[1]	0	4	4
Comfort station, toilets, family room, showers[1]	2	6	-

[1] Authorized comfort stations are conversions from vault toilets to comfort stations if the concessionaire chooses to extend sewer infrastructure. The total is the maximum; there are 11 maximum comfort stations at Monticello Shores.

Figure 4-6. Boat-in Campsite Example.

Figure 4-7. Vault Toilet Example.

4.5.4 Recommended Facilities and Services at Berryessa Point Recreation Area

Berryessa Point Recreation Area will be developed as an RV park and include the appropriate number of support facilities and services to operate and maintain these types of developments (i.e., vault toilets, water spigots, trash receptacles, parking spaces). Required facilities and services will include RV sites with water and electric utilities, camp host site with water and electric utilities, iron ranger, boat ramp with courtesy dock, and individual day use sites. Based on demand and other important factors, Berryessa Point has an authorized small marina complex with a limited number of boat slips, restaurant, retail store, and gazebo/day use shelter for small group gatherings. Refer to Table 4-5 for a complete list of facilities and services and quantities for Berryessa Point Recreation Area.

Table 4-5. Required and Authorized Facilities and Services for Berryessa Point Recreation Area

Facilities/Services	Required	Authorized	Total
Camping			
RV sites with water and electric hookup	41	0	41
Camp host site with water and electric hookup	1	0	1
RV dump station	1	0	1
Iron ranger	1	0	1
Boating			
Boat ramp launch lanes	1	0	1
Courtesy dock	1	0	1

Table 4-5. Required and Authorized Facilities and Services for Berryessa Point Recreation Area

Facilities/Services	Required	Authorized	Total
Boat slips	0	50	50
Kiosk (Boat ramp information sign)	1	0	1
Marine fuel dispenser and storage tank	0	1	1
Marina (Floating marina with dock)	0	1	1
Day Use			
Individual day use sites	17	0	17
Kiosk (trail connection)	1	0	1
Gazebo/event area	0	1	1
Restaurant			
Restaurant	0	1	1
Retail			
Retail store	0	1	1
Facilities			
Vault toilet	2	0	2

4.5.5 Recommended Facilities and Services at Spanish Flat Recreation Area

Spanish Flat Recreation Area will offer various types of camping opportunities and a small marina complex plus all the support facilities and services that are required to successfully operate and maintain these types of developments (i.e., comfort stations, vault toilets, water spigots, trash receptacles, parking). The required facilities and services consist of an entry station, RV sites with utilities, standard sites without utilities, tent only sites, camp host site with utilities, and access road gate. Lodging facilities consist of yurts, rustic cabins and tent cabins. Individual days use sites will be offered. Reclamation is installing an RV dump station that can be used by the concessionaires. The required facilities and services at the marina complex will consist of several boat slips, watercraft rentals, fish cleaning station, boat ramp, courtesy dock, on-shore fuel and sanitary storage tanks, boat fuel and septic pump out stations, and concessionaire building. Based on future demand and other important factors, Spanish Flat is authorized to offer upgrades of standard sites without utilities to standard sites with utilities, playground, and restaurant. Refer to Table 4-6 for a complete list of facilities and services and quantities for Spanish Flat Recreation Area.

Table 4-6. Required and Authorized Facilities and Services for Spanish Flat Recreation Area

Facilities/Services	Required	Authorized	Total
Camping			
Tent sites	49	0	49
Standard sites without utilities	10	0	10
RV sites with utilities	12	0	12
Camp host site with utilities	1	0	1
RV dump station	0	1	1
Playground and group area	0	1	1
Lodging			
Yurts	3	0	3
Rustic cabins	4	0	4
Tent cabins	3	0	3
Boating			
Boat ramp launch lanes	2	2	4
Courtesy dock	1	1	2
Boat slips	75	0	75
Marina access dock	1	0	1
Kiosk (boat ramp information sign)	1	0	1
On-shore fuel tank	1	0	1
Marina fuel dispenser	1	0	1
Fish cleaning station	1	0	1
Fishing boat rental	6	0	6
Ski boat rental	8	0	8
Kayak/canoe rental	4	0	4
Paddle board rental	2	0	2
Jet ski rental	10	0	10
Deck cruiser/pontoon	5	0	5
Concessionaire building	1	0	1
Marina (Floating marina building)	1	0	1
Day Use			
Individual day use sites	21	0	21
Boat exclusion area	1	0	1
Kiosk (trail connection)	1	0	1
Restaurant			
Restaurant	0	1	1
Retail			
Retail	0	1	1

Table 4-6. Required and Authorized Facilities and Services for Spanish Flat Recreation Area

Facilities/Services	Required	Authorized	Total
Facilities			
Entry station	1	0	1
Vault toilet	3	0	3
Comfort station, toilets only	3	0	3
Comfort station, toilets, family room, showers	1	0	1
Access road closure gate	1	0	1

Figure 4-8. Rustic Cabin with No Utilities Example.

4.5.6 Recommended Facilities and Services at Steele Canyon Recreation Area

Steele Canyon Recreation Area will be developed as a campground and marina complex and include the appropriate number of support facilities and services to operate and maintain these types of developments (i.e., comfort stations, water spigots, trash receptacles, parking). The required campground facilities and services will consist of overnight RV sites with utilities, standard sites with and without utilities, tent only sites, camp host site with utilities, a minimal number of day use sites, playground, and a group day use area. Lodging facilities will consist of park models with utilities, cabins with utilities and employee housing (park models). Sewer, power and water will be available on site. Reclamation is installing a RV dump station that can be used by the concessionaire. A new RV dump station is an authorized facility. The marina complex will consist of numerous boat slips, boat fuel and septic pump out stations, on-shore fuel and sanitary storage tanks, boat ramp with courtesy docks, restaurant, retail shop, fish cleaning station, dry storage facility, concessionaire/maintenance building, and watercraft rentals. Steele Canyon Recreation Area is also authorized to have additional boat slips, a multi-use center, comfort stations, floating campsites, and hike-in/boat-in campsites. Refer to Table 4-7 for a complete list of facilities and services and quantities for Steele Canyon Recreation Area.

Figure 4-9. Day Use Group Site Example

Table 4-7. Quantity of Required and Authorized Facilities and Services for Steele Canyon Recreation Area

Facilities/Services	Required	Authorized	Total
Camping			
Tent sites	13	0	13
Standard sites without utilities	32	0	32
Standard sites with utilities	19	0	19
RV sites with utilities	22	0	22
Hike-in/boat-in sites	0	5	5
Overnight group use area with 20 person occupancy	1	0	1
Camp host site with utilities	1	0	1
RV Dump Station	0	1	1
Playground and group area	1	0	1
Lodging			
Park models	12	0	12
Cabins	15	0	15

Table 4-7. Quantity of Required and Authorized Facilities and Services for Steele Canyon Recreation Area

Facilities/Services	Required	Authorized	Total
Floating campsite	0	3	3
Boating			
Boat ramp launch lanes	6	4	10
Courtesy dock	3	2	5
Boat slips	178	100	278
Marina access dock/gangway	1	0	1
Houseboat slips	32	0	32
Kiosk (boat ramp information sign)	1	0	1
On-shore fuel and sanitary storage tank	1	0	1
Marine fuel dispenser and boat septic pump out station	1	0	1
Fish cleaning station	1	1	2
Employee housing (park models)	10	0	10
Houseboat rental	6	0	6
Fishing boat rental	2	0	2
Ski boat rental	8	0	8
Kayak/canoe rental	4	0	4
Paddle board rental	4	0	4
Jet ski rental	4	0	4
Deck cruiser/pontoon rental	4	0	4
Marina service and building	1	0	1
Concessionaire/maintenance building	1	0	1
Dry storage building for 100 boats	1	0	1
Day Use			
Individual day use sites	10	0	10
Group day use area	1	0	1
Boat exclusion area	1	0	1
Kiosk (trail connection)	1	0	1
Multi-use event center	0	1	1
Restaurant			
Restaurant	1	0	1
Retail			
Retail store	1	0	1
Facilities			
Entry station	1	0	1
Entry station vault toilet	1	0	1
Comfort station, toilets only	2	0	2
Comfort station, toilets and family room	2	1	3

Table 4-7. Quantity of Required and Authorized Facilities and Services for Steele Canyon Recreation Area

Facilities/Services	Required	Authorized	Total
Comfort station, toilets, family room, showers	1	0	1
Comfort station, toilets, family room, showers, laundry	1	0	1

Figure 4-10. Floating Campsite Example.

Figure 4-11. Playground Equipment Example.

4.6 Comparison of Projected and Recommended Required and Authorized Facilities and Services

The quantities of required and authorized facilities and services recommended above for each respective recreation area are the quantities that can realistically be developed given the existing landscape limitations and constraints. Therefore, the quantities do not necessarily match those that are projected in Table 4-1. In most instances, the combined quantities of existing and recommended facilities and services are slightly less than the projected quantities needed by 2043. If future demand warrants substantial new development at Lake Berryessa beyond what is contemplated in this Market Assessment, it may be necessary to look at alternative locations around the lake. Refer to Table 4-8 for a side-by-side comparison of the key facilities and services. The existing supply of campsites, boat slips, boat storage spaces, restaurant/retail stores and launch ramps only include what is currently being provided at Pleasure Cove Resort and Markley's Cove Marina recreation areas. The current number of picnic sites only includes what is being provided at Pleasure Cove, Markley's Cove, and the day use areas managed directly by Reclamation (i.e., Oak Shores, Smittle Creek, Olive Orchard, Capell Cove and Eticuera).

Table 4-8. Comparison of Projected and the Recommended Key Required and Authorized Facilities and Services at Lake Berryessa

Type of Facilities and Services	Current Supply	Recommended Quantities (Required and Authorized)	Totals for Lake Berryessa (Current + Recommended)	Projected Supply Needed for 2043
Marinas	2	5	7[1]	5
Boat slips (wet)	539	654	1,193	1,100
Boat storage spaces (dry)	25	130	155[2]	325
Houseboats	64	47	111	140
Restaurant/Retail goods	2	5	7[3]	4
Public launch ramps	2	6	8[4]	7
Campsites (tent only, standard, RV, hike-in/boat-in)	125	465	590	726
Picnic sites	192	110	302	350
Park models (only)	0	46	46	50

Notes:

1 Seven marinas were recommended for the entire lake due to the fact that the projected number of boat slips could not be provided by 5 lake-wide marinas.

2 As stated earlier, any additional demand for dry storage spaces should be accommodated by existing or future commercial businesses off of Reclamation lands.

3 Seven restaurants and retail stores were recommended to accommodate the major developments at the recommended 5 recreation areas covered by this Market Assessment.

4 Number of ramps includes one each for Markley's Cove, Pleasure Cove, Steele Canyon, Spanish Flat, Berryessa Point, Monticello Shores and two separate ramps at Putah Canyon. An additional boat ramp is

recommended at Putah Canyon Recreation Area to accommodate the marina area on the west side of Knoxville Road.

4.7 Term Length of Concession Contracts

Pursuant to Reclamation's Concession Directives and Standards, the term of all concession contracts will be limited to the shortest period practical and will be based primarily on the investment required of the concessionaire, as determined through a financial feasibility evaluation. The term of a contract requiring minimal or no new capital investment should generally not exceed 5 years. When substantial investment is required, the length of the contract will be based on the financial feasibility evaluation to ensure that concessionaires receive a reasonable return on their investment. Since the capital investment for the development of the facilities and services at the five recreation areas are extensive, a term of 30 years is recommended.

Chapter 5
Bibliography

Association of Bay Area Governments and Metropolitan Transportation Commission. 2000-2010. *Bay Area Census*. Retrieved on February 5, 2014 from http://www.bayareacensus.ca.gov/bayarea.htm

Batchelder, Casey. 2013. Personal Communication, September 26, 2013. Park Ranger, New Melones Field Office, 6850 Studhorse Flat Road, Sonora, CA 95327.

Bigelow, Penny. 2013. Personal Communication, October 8, 2013. General Manager, Markley Cove Resort, 752 State Highway 128, Napa, CA 94558.

Bowker, J.M; Donald B.K. English; H. Ken Cordell. 1999. *Projection of Outdoor Recreation Participation to 2050* as cited in *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends, 1999*. Retrieved on October 15, 2013 from http://www.treesearch.fs.fed.us/pubs/20814

Bureau of Reclamation. 1992. Reservoir Area Management Plan for Lake Berryessa. Bureau of Reclamation, Mid Pacific Region, Central California Area office, Folsom, CA 95030

_____. 1996. *Forecasting Changes in Site Specific Recreation Use*. Bureau of Reclamation, Technical Service Center, Denver, CO 80225. Technical Memorandum No. EC-96-14.

_____. 2002. *Reclamation Manual, Directives and Standards, Concession Management by Reclamation*. Bureau of Reclamation, Policy and Administration, Land Resources Division, Denver, Colorado 80225.

_____. 2006. *Record of Decision Future Recreation Use and Operations of Lake Berryessa*. Bureau of Reclamation, Mid Pacific Region, Central California Area Office, Folsom, CA 95630.

_____. 2006. *Final Environmental Impact Statement, Future Recreation Use and Operations of Lake Berryessa* (VSP). Bureau of Reclamation, Mid Pacific Region, Central California Area Office, Folsom, CA 95630

_____. 2013. *Performance Work Statement, Lake Berryessa Concession Concept Plans*. Bureau of Reclamation, Mid Pacific Region, Central California Area Office, Folsom, CA 95630.

_____. 2013. *Reclamation Approved Rates for Concession Operated Recreation Areas for 2013 at Lake Berryessa*. Retrieved on August 22, 2013 from http://www.usbr.gov/mp/ccao/berryessa/docs/latest_concession_rates.pdf

California Delta Chambers and Visitors Authority. 2013. *Camping and RVing*. Retrieved on September 25, 2013 from http://californiadelta.org/visitor-info/rv-camping.

California Department of Boating and Waterways. 2002. *California Boating Facilities Needs Assessment, Volumes I and II*. Retrieved on February 15, 2014 from http://www.calboating.ca.gov/PDF/Reports/CBFNA/CBFNA_Vol2.pdf and http://www.dbw.ca.gov/PDF/Reports/CBFNA/CBFNA_Vol1.pdf

_____. 2011. *California Boating Survey*. Department of Boating and Waterways, 2000 Evergreen St. Sacramento, CA 95815.

_____. 2013. *State of California Department of Motor Vehicles Statistical Report – Currently Registered Vessels as of December 31, 2013*. Retrieved on February 13, 2013 from http://www.dbw.ca.gov/PDF/VesselReg/Vessel13.pdf .

California Department of Finance. 2013. *California Grew by 0.8 percent in 2012; Total State Population Nears 38 Million*. News Release, May 1, 2013. California Department of Finance, 915 L. Street, Sacramento, CA 95814.

_____. 2013. *Total Population Projections for California Counties, July 1, 2010 to 2060*. Prepared by the Demographic Research Unit, California Department of Finance, January 1, 2013. Retrieved on Jan 15, 2013 from http://www.dof.ca.gov/research/demographic/reports/projections/P-1/

California Department of Parks and Outdoor Recreation. 2008. *Water Recreation Opportunity Spectrum, Lake Oroville State Recreation Area, Inventory and Management Alternatives*. Prepared by Aukerman, Haas, and Associates, LLC for California Department of Parks and Recreation.

_____. 2008. *Water Recreation Opportunity Spectrum, Folsom Lake State Recreation Area, Inventory and Management Alternatives*. Prepared by Aukerman, Haas, and Associates, LLC for California Department of Parks and Recreation.

_____. 2009. *Public Opinions and Attitude on Outdoor Recreation in California*. California State Parks, Planning Division, P.O. Box 942896, Sacramento, CA 94296-0001.

_____. 2009. *Statewide Comprehensive Outdoor Recreation Plan*. Retrieved on October 10, 2013 from http://www.parks.ca.gov/?page_id=23880

_____. 2011. *Alternative Camping at California State Parks, A Report on Results of a 2009-2010 Visitor Survey and a 2010 Management and Maintenance Survey*. California State Parks Planning Division, P.O. Box 942896, Sacramento, CA 94296-0001.

_____. 2013. *Lake Oroville State Recreation Area*. Retrieved September 24, 2013 from http://lakeorovillemarina.com/destination/.

_____. 2013. *Camping information for Lake Oroville*. Retrieved on September 24, 2013 from http://www.water.ca.gov/recreation/locations/oroville/camping.cfm

California Department of Water Resources. 2004. *Information Package, Relicensing of the Oroville Facilities, Federal Energy Regulatory Commission License Project No. 2100, January 2001*. As stated in the Water Recreation Opportunity Spectrum, Lake Oroville State Recreation Area, Inventory and Management Alternatives, 2008.

Cartier, Emmett. 2013. Personal Communication. September 26, 2013. Outdoor Recreation Planner, Central California Area Office, 7794 Folsom Dam Road, Folsom, CA 95630.

Cordell. Ken; McDonald, Barbara L.; Teasly, R. Jeff; Bergstrom, John C.; Martin, Jack; Bason, Jim; Leeworthy, Vernon R. 1999. *Outdoor Participation Trends* as cited in *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends, 1999*. Retrieved on October 15, 2013 from http://www.treesearch.fs.fed.us/pubs/20814

_____. 2010. Outdoor Recreation Trends and Futures. *A Technical Report Supporting the Forest Service 2010 Resource Planning Act Assessment.* Southern Research Station, 200 W.T. Weaver Blvd., Asheville, NC 28804.

_____. 2012. *Recent Outdoor Recreation Trends*. Athens Research Group, Southern Research Station, USDA, Athens Georgia.

_____. 2012. *Hispanic American and Outdoor Recreation*. U.S. Forest Service, Southern Research Station. Retrieved on October 3, 2013 from http://warnell.forestry.uga.edu/nrrt/nsre/IRISRec/IRISRec24rpt.pdf .

_____. 2013. *Hispanic Americans and Outdoor Recreation*. Athens Research Group, Southern Research Station, USDA, Athens Georgia.

Delta Protection Commission. 2012. *Economic Sustainability Plan for Sacramento-San Joaquin Delta*. Retrieved on 02/10/2013 from http://www.deltarevision.com/Issues/recreation/recreation/economicsustainability-delta2012.pdf

East Bay Municipal utility District. 1999. *East Bay Watershed Master Plan of February 29, 1996 as revised March 15, 1999*. Retrieved on January 30, 2013 from http://www.ebmud.com/sites/default/files/pdfs/EBMUD%20Watershed%20Master%20Plan_3.pdf

East Bay Regional Parks District. 2014. Profile of East Bay Regional Parks District Lands. Retrieved on 01/30/2014 from http://www.ebparks.org/about#profile.

Fletcher, James, R.G. Guthrie. 1997. *Lake Berryessa Market Survey*. Survey Research Center, California State University, Chico.

Haas, G., M.D. Wells, V. Lovejoy, and D. Welch. 2007. *Estimating Future Recreation Demand: A Decision Guide for the Practitioner*. United States Department of the Interior, Bureau of Reclamation, Office of Program and Policy Services, Denver Federal Center, Denver, Colorado.

Haas, G. and V. Lovejoy. 2011. *A Houseboat Capacity Analysis for Lake Berryessa, California*. United States Department of the Interior, Bureau of Reclamation, Central California Area Office, Folsom, California.

Hof, J.G., and H.F. Kaiser, 1983. *Long-term Outdoor Recreation Participation Projections for Public Land Management Agencies*. *Journal of Leisure Research* 15(1).

Laird, Jeffrey. 2013. Personnel Communication, Park Manager, Bureau of Reclamation, Lake Berryessa Field Office, 5520 Knoxville Road, Napa California 94558.

Maine Department of Conservation, Bureau of Parks and Lands. 2014. *State Comprehensive Outdoor Recreation Plan, 2009 – 2014*. Bureau of Parks and Lands, 22 State House Station, Augusta, ME 04333-0022.

Miller, Joel. 2013. Personnel Communication, Natural Resource Management Ranger, U.S. Army Corps of Engineers, San Francisco District, Lake Sonoma Office.

National Park Service. 2011. Golden Gate National Recreation Area Muir Woods National Monument, Draft General Management Plan/Environmental Impact Statement, Volume I and II, August 2011. Retrieved on 02/04/2013 from http://parkplanning.nps.gov/document.cfm?parkID=303&projectID=15075&documentID=43168

Outdoor Foundation®. 2009. A Special Report on Camping. Outdoor Foundation, 4909 East Circle, Suite 200, Boulder Colorado 80301. Retrieved on October 3, 2013 from http://www.outdoorfoundation.org/pdf/research.camping.pdf

_____. 2013. Outdoor Participation Report. Outdoor Foundation, 4909 East Circle, Suite 200, Boulder Colorado 80301. Retrieved on October 3, 2013 from http://www.outdoorfoundation.org/pdf/ResearchParticipation2013.pdf

Paddling California. 2013. New Hogan Lake. Retrieved on September 18, 2013 from http://www.paddlingcalifornia.com/New_Hogan_Lake.html

Polk, Janet. 2013. Personal Communication, October 30, 2013. General Manager, Lake Sonoma Resort and Marina, Geyserville, CA 95441.

Prieto, John. 2013. Personal Communication, October 8, 2013. General Manager Lake Oroville Marina, 3428 Pentz Rd, Paradise, CA

Recreational Boating and Fishing Foundation and Outdoor Foundation. 2012. Special Report on Fishing and Boating. Recreational Boating and Fishing Foundation, 500 Montgomery Street, Suite 300, Alexandria, VA 22314 and Outdoor Foundation, 4909 East Circle, Suite 200, Boulder, Colorado 80301. Retrieved on October 2, 2013 from http://www.outdoorfoundation.org/pdf/ResearchFishing2012.pdf

Royal Elk Park Management. 2013. List of Services at Lake Berryessa, Putah Canyon Campground. Retrieved on August 22, 1013 from http://www.royalelkparkmanagement.com/Lake_Berryessa.html

Salata, Bill. 2013. Personal Communication, September 4, 2013. Sector Superintendent, Clear Lake Sector, California Department of Parks and Recreation, 5300 Soda Bay Road, Kelseyville, CA 95451.

Sparkman, Terry. 2013. Personal Communication, October 9, 2013. General Manager, Pleasure Cove Marina (Forever Resorts), 6100 State Highway 128, Napa, California 94558.

Tarrant, Michael A., Erin Smith, and Ken H. Cordell. 1999. Recreation Visitor Preferences for and Perception of Outdoor Recreation Setting Attributes, Overview of Visitor Satisfactions with, and Preference for, attributes of Outdoor Recreation Settings. U.S. Forest Service, Southern Research Station.

U.S. Army Corps of Engineers. 2010. Lake Level Report Lake Sonoma - 2010, US Army Corps of Engineers – Value to the Nation. Retrieved on September 16, 2013 from http://www.corpsresults.us/recreation/fastfacts/lake.cfml?lakeID=227

_____. 2013. Lake Level Report Lake New Hogan Lake - 2010, US Army Corps of Engineers – Value to the Nation. Retrieved on September 16, 2013 from http://www.corpsresults.us/recreation/fastfacts/lake.cfml?lakeID=301

U.S. Census Bureau. 2010. State and County Quickfacts. All State of California and county quickfacts accessed on September 10, 2013 from http://quickfacts.census.gov/qfd/states/00000.html

_____. 2010. National Population Projections: Summary Tables. Retrieved on October 4, 2013 from http://www.census.gov/population/projections/data/national/2012/summarytables.html

_____. 2013. U.S. Census Bureau Projections Show a Slower Growing, Older, More Diverse Nation a Half Century from Now. U.S. Census Bureau News Release, December 12, 2012. Retrieved on November 7, 2013 from http://www.census.gov/newsroom/releases/archives/population/cb12-243.html .

_____ 2013. Demographic Profiles, California, all Counties, and all Places. Retrieved on January 25, 2013 from http://www.dof.ca.gov/research/demographic/state_census_data_center/census_2010/#DP

United States Coast Guard. 2011. National Recreational Boating Survey. Commandant (CG-BSY-2), U.S. Coast Guard Headquarters, 2100 Second St. SW Stop 7581, Washington D.C. 20593-7581.

U.S. Fish and Wildlife Service. 2011. National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

United States Forest Service. 2012. Giant Sequoia National Monument, Final Environment Impact Statement, Appendix D – Recreation Needs Analysis. Accessed September 24, 2013 from http://www.fs.fed.us/r5/sequoia/gsnm/feis/AppD.pdf.

Visit Napa County. 2012. Napa Valley Visitor Profile, Report of Findings. Prepared by Destination Analysts for Visit Napa County.

Appendix A
Phase 1 Potential Market Demand and Financial Feasibility Proposed Hotel – Lake Berryessa, CA

Prepared for: Napa County, Community and Intergovernmental Affairs

Prepared by: PKF Consulting USA

Sent via email to: larry.florin@countyofnapa.org
No hard copy to follow

October 24, 2013

Mr. Lawrance Florin
Director of Community and Intergovernmental Affairs – County of Napa
County Administration Building
1195 Third Street, Suite 310
Napa, California 94559

Re: Phase I – Potential Market Demand and Financial Feasibility
Proposed Hotel – Lake Berryessa, CA

Dear Mr. Florin:

In accordance with your request, we have completed our analysis of the potential market demand for the development of lodging facilities to be located at various concession locations at Lake Berryessa, California. Pursuant to the terms of our engagement agreement, we have prepared a brief letter report summarizing our findings and conclusions.

A. SCOPE AND METHODOLOGY

As we understand it, the Bureau of Reclamation ("Reclamation") has engaged CDM Smith, Inc. ("CDM") to conduct a study to assess the current and future market demand and develop financially feasible conceptual site plans for recreational services at five designated concession areas surrounding Lake Berryessa (the "Lake"). PKF Consulting USA ("PKF Consulting") was formally retained on September 4, 2013, by representatives of the County of Napa to conduct a study of the potential market demand and financial feasibility for the development of lodging facilities to be located at Lake Berryessa, California. More specifically, we were asked to evaluate the market demand and financial feasibility of a traditional or "stick-built" hotel facility at the Lake.

As will be discussed in more detail later in this brief report, based on our analysis, we have concluded that the development of a traditional hotel at Lake Berryessa would not be financially feasible due to its which is removed location from Napa Valley and the very seasonal level of demand it is expected to attract. However, we are of the opinion that a pre-manufactured "park model" type lodging facility could be viable. Accordingly, we subsequently made a recommendation of the appropriate size and market position of this type of facility at Lake Berryessa. We then provided our projections of the occupancy and average daily room rates ("ADR") this type of facility could reasonably expect to achieve for a stabilized year of operation.

Specifically, in conducting the study of the potential market demand, we:

- Evaluated the appropriateness of the proposed sites Reclamation has identified for the development of a lodging facility;

- Analyzed the current and future market demand for hotel accommodations in the local market area. It is understood that other recreational/camping uses will also accommodate visitors to Lake Berryessa;

- Analyzed the historical operating performance of lodging facilities in comparable markets near major lakes around the State of California, including Lake Tahoe, Clear Lake, Bass Lake and other seasonal recreational locations within California;

- Provided key planning criteria as to the optimal sizing, tier of asset, and location for a potential hotel in the Lake Berryessa recreational area;

- Developed a forecast of the likely occupancy levels and average daily room rates ("ADR") the proposed hotel could reasonable achieve for a stabilized year of operation; and,

- Provided our recommendation of the optimal type of lodging facilities (e.g. park model units, cabins, or hotel rooms) to be developed as well as the most desirable designated concession area at Lake Berryessa.

Several sources were used in compiling the background information and preparing the analyses contained in this report. These sources include PKF Consulting's *Trends in the Hotel Industry*, Smith Travel Research, data gathered through direct interviews with representatives of local businesses, data provided by sources in the lodging chains with which the competitive properties are affiliated, and data from various local government agencies.

B. SUMMARY OF CONCLUSIONS

Based on the preceding work program, we have made a determination of the potential market demand for the development of lodging facilities to be located in a designated concession location at Lake Berryessa. The results of our research and analyses are summarized in the following paragraphs.

1. **Lodging Market Overview -** Given the location of Lake Berryessa in a relatively remote area, nearly 40 miles north of the City of Napa, the primary, if not only source of demand for a lodging facility, would be from persons visiting the Lake for boating and other recreational activities. As such, the market is highly seasonal with peak visitation during the summer months and on weekends during the Spring and Fall, and low levels of demand during the balance of the year;

In order to quantify the level of seasonality for a lodging facility at the Lake, we have evaluated the historical operating performance of comparable seasonal lodging markets near major lakes in the State of California, including Clear Lake, Bass Lake, Lake Oroville, and Lake Tahoe.

Starting with Lake Tahoe, while this location is considered a significantly superior location as compared to Lake Berryessa given its two peak seasons (summer and the winter ski season), gaming activities and recognition as an international destination market, it does provides a point of reference for the potential operating performance of a hotel located in a seasonal market like Lake Berryessa. Presented in the table below is a summary of the historical operating performance of the hotel market located in South Lake Tahoe for the period 2007 through August of 2013. The competitive market is comprised primarily of mid-tier hotels located along or proximate to the southern shores of Lake Tahoe.

South Lake Tahoe Secondary Market
Historical Performance of the Competitive Market

Year	Annual Supply	Percent Change	Occupied Rooms	Percent Change	Market Occupancy	ADR	Percent Change	RevPAR	Percent Change
2007	286,525		139,824		48.8%	$98.56		$48.10	
2008	286,525	0.0%	133,521	-4.5%	46.6%	$101.83	3.3%	$47.45	-1.3%
2009	286,525	0.0%	114,323	-14.4%	39.9%	$94.78	-6.9%	$37.82	-20.3%
2010	286,525	0.0%	114,037	-0.3%	39.8%	$94.14	-0.7%	$37.47	-0.9%
2011	286,160	-0.1%	117,612	3.1%	41.1%	$91.04	-3.3%	$37.42	-0.1%
2012	286,160	0.0%	115,895	-1.5%	40.5%	$94.77	4.1%	$38.38	2.6%
CAGR	**0.0%**	**-**	**-3.7%**	**-**	**-**	**-0.8%**	**-**	**-4.4%**	**-**
YTD Aug '12	190,773	-	80,506	-	42.2%	$94.84	-	$40.02	-
YTD Aug '13	190,773	0.0%	94,624	17.5%	49.6%	$100.42	5.9%	$49.81	24.5%

Source: **PKF Consulting USA**

As noted, given the highly seasonal nature of the Lake Tahoe market, overall occupancy performance ranged from the high 30 to 40 percent range over the past six years. Based on our knowledge of the individual hotels comprising the competitive market, demand typically peaked during the popular summer months of June, July, August, and September.

In addition to the foregoing, we evaluated the operating performance of the following resort hotels located on or near lakes in Northern California:

- **Upper-tier Hotels at Lake Tahoe –** In addition to the "mid-tier" South Lake Tahoe hotels detailed in the above table, we also reviewed the operating performance of upper-tier hotels such as the Hyatt Regency at Lake Tahoe, Lake Tahoe Resort (formerly the Embassy Suites) in South Lake Tahoe, Resort at Squaw Creek and the Ritz Carlton Highlands at Lake Tahoe. Over the past six years the combined occupancy for these hotels has ranged between 50.5 and 58.6 percent, better than the performance of the mid-tier hotels located at Lake Tahoe, but still below the level of occupancy needed to support new construction.

- **Konocti Harbor Resort and Spa –** We have reviewed information in our files as to the operating performance of the Konocti Harbor Resort and Spa located on Clear Lake before it closed approximately four years ago. The highest annual occupancy level that this resort had ever achieved was approximately 45 percent. It should be noted that this occupancy level was largely driven by the major concert events this facility offered on weekends throughout the year. If the resort did not offer these concerts, its occupancy level would have been much less.

- **Existing Lodging at Lake Berryessa –** Pleasure Cove and Markley Cove currently have a total of 32 cabins available for nightly rental. For year end 2012 these units achieved an annual occupancy of approximately 15.7 percent. Through August of this year, the occupancy of these units is 21.0 percent, which is 1.9 percent over prior year levels.

As can be clearly noted from the above market data, a resort facility located in a somewhat remote and seasonal destination such as Lake Berryessa cannot be expected to achieve an occupancy level in excess of between 40 and 50 percent per annum. This level of market performance is also supported by the occupancy levels of hotels located in other seasonal markets such as along the Sonoma and Mendocino Coast.

2. **Recommended Lodging Facility for Lake Berryessa -** Given the relatively low annual occupancy envisioned for a lodging facility at the Lake, we would recommend that consideration be given to the development of a lodging facility comprised of "park model" units rather than "stick built" hotel rooms. Park model units are manufactured lodging units that typically can be purchased and installed at less than half the

cost of a typical hotel room. On average, park model units typically costs between $50,000 to $100,000 per unit to construct and install, depending on the quality of the accommodations. Comparatively, a midscale traditional "stick built" hotel located in Napa County can cost in excess of $200,000 per guestroom. As a result of its overall lower total cost of development, it is in our opinion, that a park model lodging unit is the most viable option for a lodging facility at Lake Berryessa. Based on our experience, a traditional lodging facility achieving the above level of market performance (an annual occupancy of less than 50 percent) is not financially feasible to develop. Typically, an occupancy level in excess of 65 to 70 percent is required for a hotel to generate sufficient income to provide a reasonable return on investment.

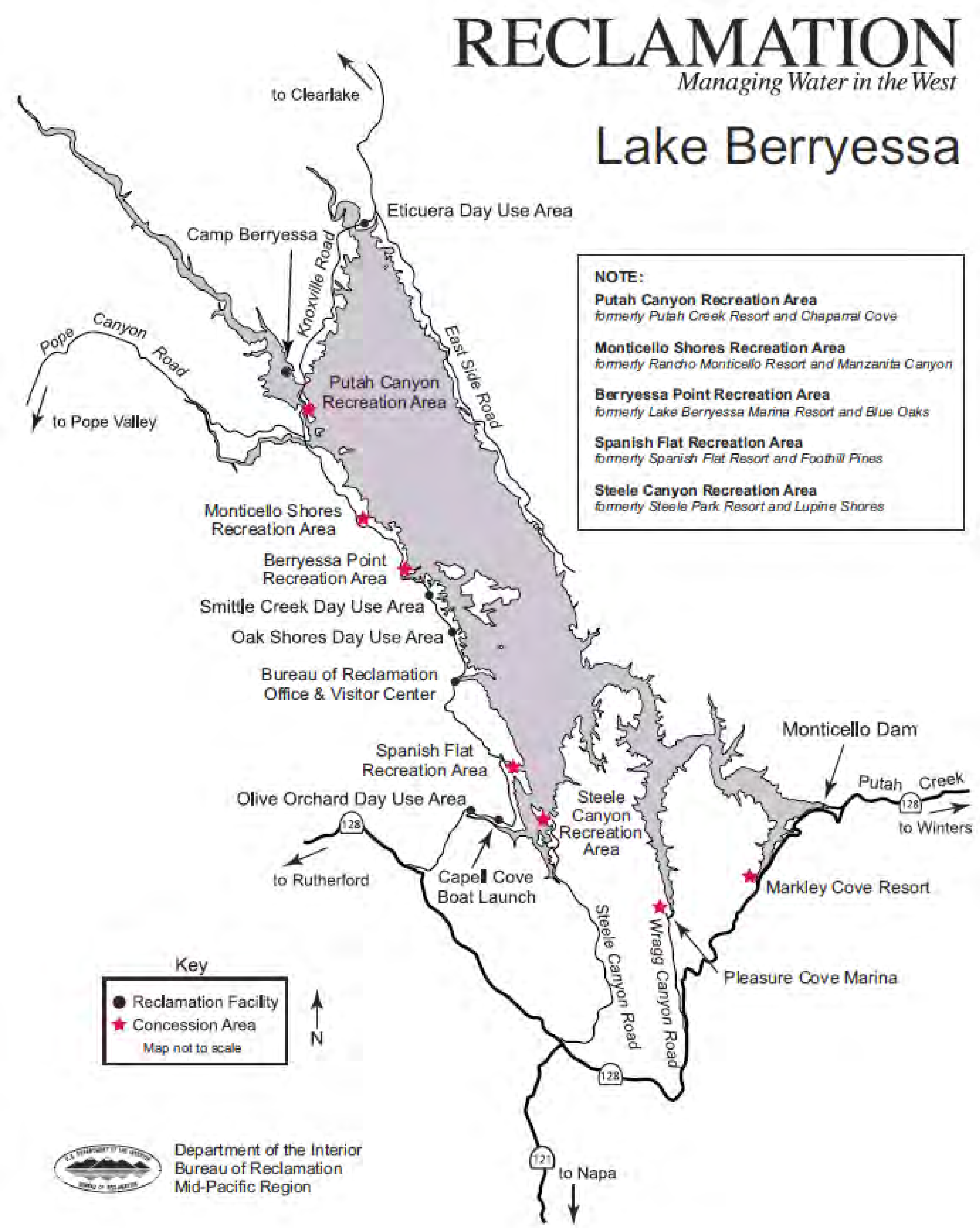
Given the foregoing, we are of the opinion that the only viable type of lodging facility for Lake Berryessa would be a park model unit, due to their much lower capital cost as compared to a traditional hotel. These types of units have proven to be very popular in other seasonal markets similar to Lake Berryessa such as locations near our National Parks. As a point of example, the Delaware North Corporation is currently developing a 50-unit park model hotel in West Yellowstone to be called "Cabins of the West". Some illustrations and renderings of this proposed project are presented at the end of this report.

Due to the high level of seasonality at the Lake and expected visitation levels, we are of the opinion +/- 50 park model units would be the optimal number of units to satisfy demand in the area. As will be discussed below, any lodging development at Lake Berryessa will benefit most from a location proximate to various concessions that will act as additional amenities to guests accommodating the units. Assuming a professional management company, which is experienced in the operation of similar lodging facilities, would be retained to manage the park model units, we have prepared a hypothetical monthly projection of occupancy and average daily room rates in the table below. Our projections were based on a total room count of 50-units.

Proposed 50 Park Model Units - Lake Berryessa Projected Monthly Occupancy and ADR Performance - Stabilized Year						
Month	**Days**	**Rooms Available**	**Rooms Occupied**	**Occupancy**	**ADR**	**Rooms Revenue**
January	31	1,550	388	**25.0%**	**$115.00**	$44,563
February	28	1,400	420	**30.0%**	**$115.00**	$48,300
March	31	1,550	620	**40.0%**	**$120.00**	$74,400
April	30	1,500	600	**40.0%**	**$130.00**	$78,000
May	31	1,550	698	**45.0%**	**$150.00**	$104,625
June	30	1,500	975	**65.0%**	**$170.00**	$165,750
July	31	1,550	1,116	**72.0%**	**$200.00**	$223,200
August	31	1,550	1,163	**75.0%**	**$200.00**	$232,500
September	30	1,500	825	**55.0%**	**$175.00**	$144,375
October	31	1,550	527	**34.0%**	**$155.00**	$81,685
November	30	1,500	390	**26.0%**	**$135.00**	$52,650
December	31	1,550	388	**25.0%**	**$115.00**	$44,563
Average	**365**	**18,250**	**8,108**	**44.4%**	**$159.67**	**$1,294,610**

As shown above, assuming the development of a high quality 50-unit park model development at Lake Berryessa, we project the facility could achieve and annual occupancy of approximately 44 percent with and an average daily room rate ("ADR") of approximately $160. Similar to that of the comparable markets, demand for the units is expected to be very seasonal with peak levels achieved in the popular summer months.

3. **Location of a Park Model Hotel at Lake Berryessa** - As discussed, Reclamation is currently in the process of determining the optimal recreational services to be developed at five designated concession locations at Lake Berryessa recreational area: (1) Steele Canyon Recreation Area, (2) Spanish Flat Recreation Area, (3) Berryessa Point Recreation Area, (4) Monticello Shores Recreation Area, and (5) Putah Canyon Recreation Area. Presented below, we have provided a map of Lake Berryessa, detailing the location of each concession area.


RECLAMATION
Managing Water in the West
Lake Berryessa
to Clearlake
Eticuera Day Use Area
Camp Berryessa
Knoxville Road
East Side Road
Pope Canyon Road
to Pope Valley
Putah Canyon Recreation Area
NOTE:
Putah Canyon Recreation Area
formerly Putah Creek Resort and Chaparral Cove
Monticello Shores Recreation Area
formerly Rancho Monticello Resort and Manzanita Canyon
Berryessa Point Recreation Area
formerly Lake Berryessa Marina Resort and Blue Oaks
Spanish Flat Recreation Area
formerly Spanish Flat Resort and Foothill Pines
Steele Canyon Recreation Area
formerly Steele Park Resort and Lupine Shores
Monticello Shores Recreation Area
Berryessa Point Recreation Area
Smittle Creek Day Use Area
Oak Shores Day Use Area
Bureau of Reclamation Office & Visitor Center
Spanish Flat Recreation Area
Olive Orchard Day Use Area
Monticello Dam
Putah Creek
128
to Winters
Steele Canyon Recreation Area
128
to Rutherford
Capell Cove Boat Launch
Markley Cove Resort
Steele Canyon Road
Wragg Canyon Road
Pleasure Cove Marina
Key
Reclamation Facility
Concession Area
Map not to scale
N
128
Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
121
to Napa

When determining the location for a lodging facility at Lake Berryessa it is important to have the park model units located proximate to other major tourist facilities such as a marina, restaurant, retail, etc. Another primary consideration is the vistas and general attractiveness of the site. Two of the five designated concession areas meet these criteria – Steele Canyon and Spanish Flat.

Based on these factors and given the relatively easy access of the Steele Canyon Recreation Area at the south end of the Lake, coupled with the fact that this site has more extensive infrastructure (e.g. is connected to a sewer system) and is the location that CDM is recommending for the most intense level of development at the Lake including a marina and restaurant, we are of the opinion that it is the most appropriate location for lodging use. However, if a marina and restaurant were to be located at Spanish Flat, this site would be equally appropriate.

As you have requested, we are terminating any further work on this project pending further discussions with you. If you so require, the next phase of our engagement would be to evaluated the financial feasibility of the recommended development.

We appreciate the opportunity to be of assistance to you in this matter. If you have any questions on the foregoing analysis, or if we can be of any further assistance to you, please do not hesitate to call.

Yours sincerely,

PKF Consulting USA

Thomas E. Callahan

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ADDENDA

A. CERTIFICATION OF CONSULTANTS

B. STATEMENT OF ASSUMPTIONS AND LIMITING CONDITIONS

C. PHOTOGRAPHS AND RENDERINGS OF PARK MODEL UNITS

ADDENDUM A

CERTIFICATION OF CONSULTANTS

CERTIFICATION OF THE CONSULTANTS

I, Thomas E. Callahan, CPA, CRE, MAI, FRICS, certify that to the best of my knowledge and belief:

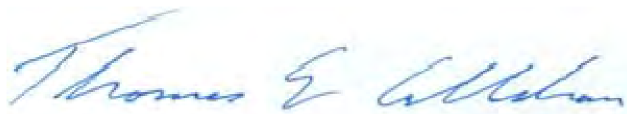
- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, conclusions, and recommendations.
- I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest with respect to the parties involved.
- I have performed no (or the specified) services, as appraisers or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- I have no bias with respect to any property that is the subject of this report or to the parties involved with this assignment.
- My engagement in this assignment was not contingent upon developing or reporting predetermined results.
- My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- Ashish A. Patel and Thomas E. Callahan have made a personal inspection of the property that is the subject of this report.
- Ashish A. Patel has provided significant professional assistance to the persons signing this report.
- The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and the Standards of Professional Appraisal Practice of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

- As of the date of this report, Thomas E. Callahan, CPA, CRE, MAI, FRICS has completed the continuing education program for Designated Members of the Appraisal Institute.

- Thomas E. Callahan is a Certified General Real Estate Appraiser in the State of California.

Yours sincerely,

PKF Consulting USA



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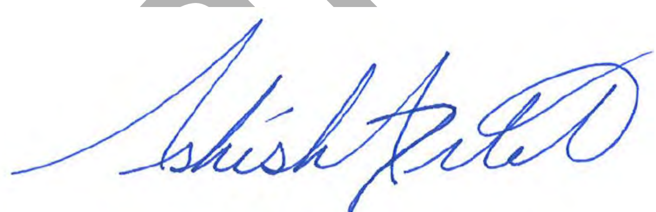

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ADDENDUM B

STATEMENT OF ASSUMPTIONS AND LIMITING CONDITIONS

STATEMENT OF ASSUMPTIONS AND LIMITING CONDITIONS

Economic and Social Trends - The consultant assumes no responsibility for economic, physical or demographic factors which may affect or alter the opinions in this report if said economic, physical or demographic factors were not present as of the date of the letter of transmittal accompanying this report. The consultant is not obligated to predict future political, economic or social trends.

Information Furnished by Others - In preparing the report, the consultant was required to rely on information furnished by other individuals or found in previously existing records and/or documents. Unless otherwise indicated, such information is presumed to be reliable. However, no warranty, either express or implied, is given by the consultant for the accuracy of such information and the consultant assumes no responsibility for information relied upon later found to have been inaccurate. The consultant reserves the right to make such adjustments to the analyses, opinions and conclusions set forth in this report as may be required by consideration of additional data or more reliable data that may become available.

Hidden Conditions - The consultant assumes no responsibility for hidden or unapparent conditions of the properties, subsoil, ground water or structures. No responsibility is assumed for arranging for engineering, geologic or environmental studies that may be required to discover such hidden or unapparent conditions.

Hazardous Materials - The consultant has not been provided any information regarding the presence of any material or substance on or in any portion of the subject property, which material or substance possesses or may possess toxic, hazardous and/or other harmful and/or dangerous characteristics. Unless otherwise stated in the report, the consultant did not become aware of the presence of any such material or substance during the consultant's inspection of the subject property. However, the consultant is not qualified to investigate or test for the presence of such materials or substances. The consultant assumes no responsibility for the presence of any such substance or material on or in the subject property, nor for any expertise or engineering knowledge required to discover the presence of such substance or material. Unless otherwise stated, this report assumes the subject property is in compliance with all federal, state and local environmental laws, regulations and rules.

Zoning and Land Use - Unless otherwise stated, the subject property is assumed to be in full compliance with all applicable zoning and land use regulations and restrictions.

Licenses and Permits - Unless otherwise stated, the property is assumed to have all required licenses, permits, certificates, consents or other legislative and/or administrative authority from any local, state or national government or private entity or organization that have been or can be obtained or renewed for any use on which the performance estimates contained in this report are based.

Engineering Survey - No engineering survey has been made by the consultant. Except as specifically stated, data relative to size and area of the subject property was taken from sources considered reliable and no encroachment of the subject property is considered to exist.

Subsurface Rights - No opinion is expressed as to the value of subsurface oil, gas or mineral rights or whether the property is subject to surface entry for the exploration or removal of such materials, except as is expressly stated.

Maps, Plats and Exhibits - Maps, plats and exhibits included in this report are for illustration only to serve as an aid in visualizing matters discussed within the report. They should not be considered as surveys or relied upon for any other purpose, nor should they be removed from, reproduced or used apart from the report.

STATEMENT OF ASSUMPTIONS AND LIMITING CONDITIONS
(Continued)

Legal Matters - No opinion is intended to be expressed for matters which require legal expertise or specialized investigation or knowledge beyond that customarily employed by real estate consultants.

Right of Publication - Possession of this report, or a copy of it, does not carry with it the right of publication. Without the written consent of the consultant, this report may not be used for any purpose by any person other than the party to whom it is addressed. In any event, this report may be used only with properly written qualification and only in its entirety for its stated purpose.

Archeological Significance - No investigation has been made by the consultant and no information has been provided to the consultant regarding potential archeological significance of the subject property or any portion thereof. This report assumes no portion of the subject property has archeological significance.

Compliance with the Americans with Disabilities Act - The Americans with Disabilities Act ("ADA") became effective January 26, 1992. It is assumed that the property will be in direct compliance with the various detailed requirements of the ADA.

Definitions and Assumptions - The definitions and assumptions upon which our analyses, opinions and conclusions are based are set forth in appropriate sections of this report and are to be part of these general assumptions as if included here in their entirety.

Utilization of the Land and/or Improvements - It is assumed that the utilization of the land and/or improvements is within the boundaries or property described herein and that there is no encroachment or trespass.

Dissemination of Material - Neither all nor any part of the contents of this report shall be disseminated to the general public through advertising or sales media, public relations media, new media or other public means of communication without the prior written consent and approval of the consultant(s).

Distribution and Liability to Third Parties - The party of whom this report was prepared may distribute copies of this report only in its entirety to such third parties as may be selected by the party for whom this report was prepared; however, portions of this report shall not be given to third parties without our written consent. Liability to third parties will not be accepted.

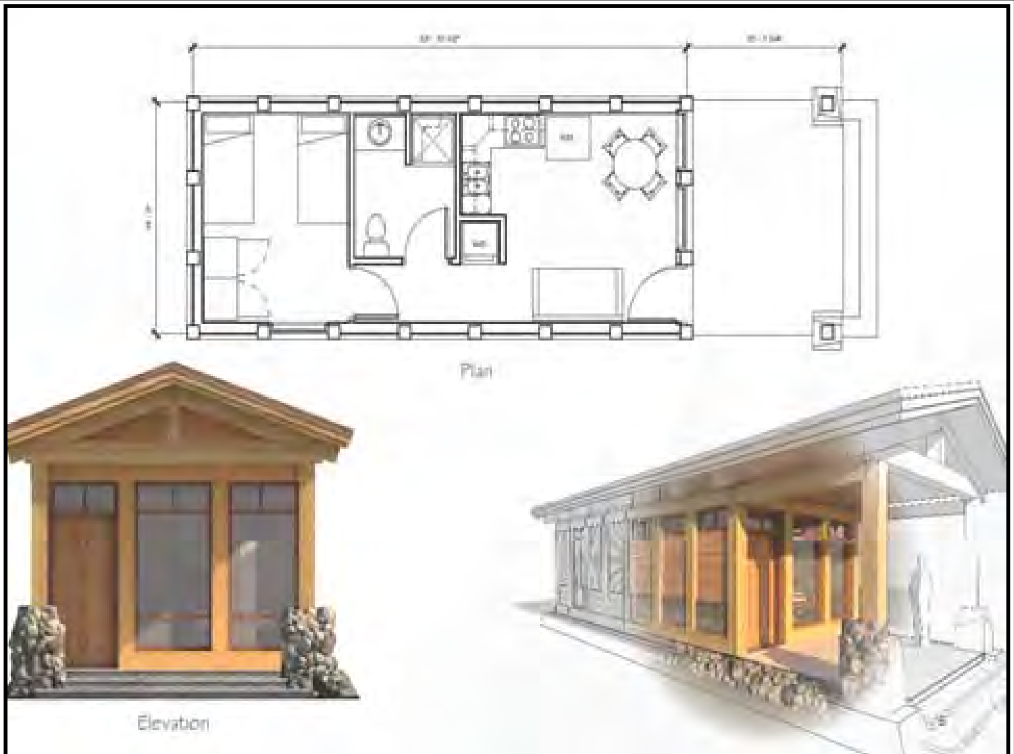
Use in Offering Materials - This report, including all cash flow forecasts, market surveys and related data, conclusions, exhibits and supporting documentation may not be reproduced or references made to the report or to PKF Consulting in any sale offering, prospectus, public or private placement memorandum, proxy statement or other document ("Offering Material") in connection with a merger, liquidation or other corporate transaction unless PKF Consulting has approved in writing the text of any such reference or reproduction prior to the distribution and filing thereof.

Limits to Liability - PKF Consulting cannot be held liable in any cause of action resulting in litigation for any dollar amount which exceeds the total fees collected from this individual engagement.

Legal Expenses - Any legal expenses incurred in defending or representing ourselves concerning this assignment will be the responsibility of the client.

ADDENDUM C

PHOTOGRAPHS AND RENDERINGS OF PARK MODEL UNITS

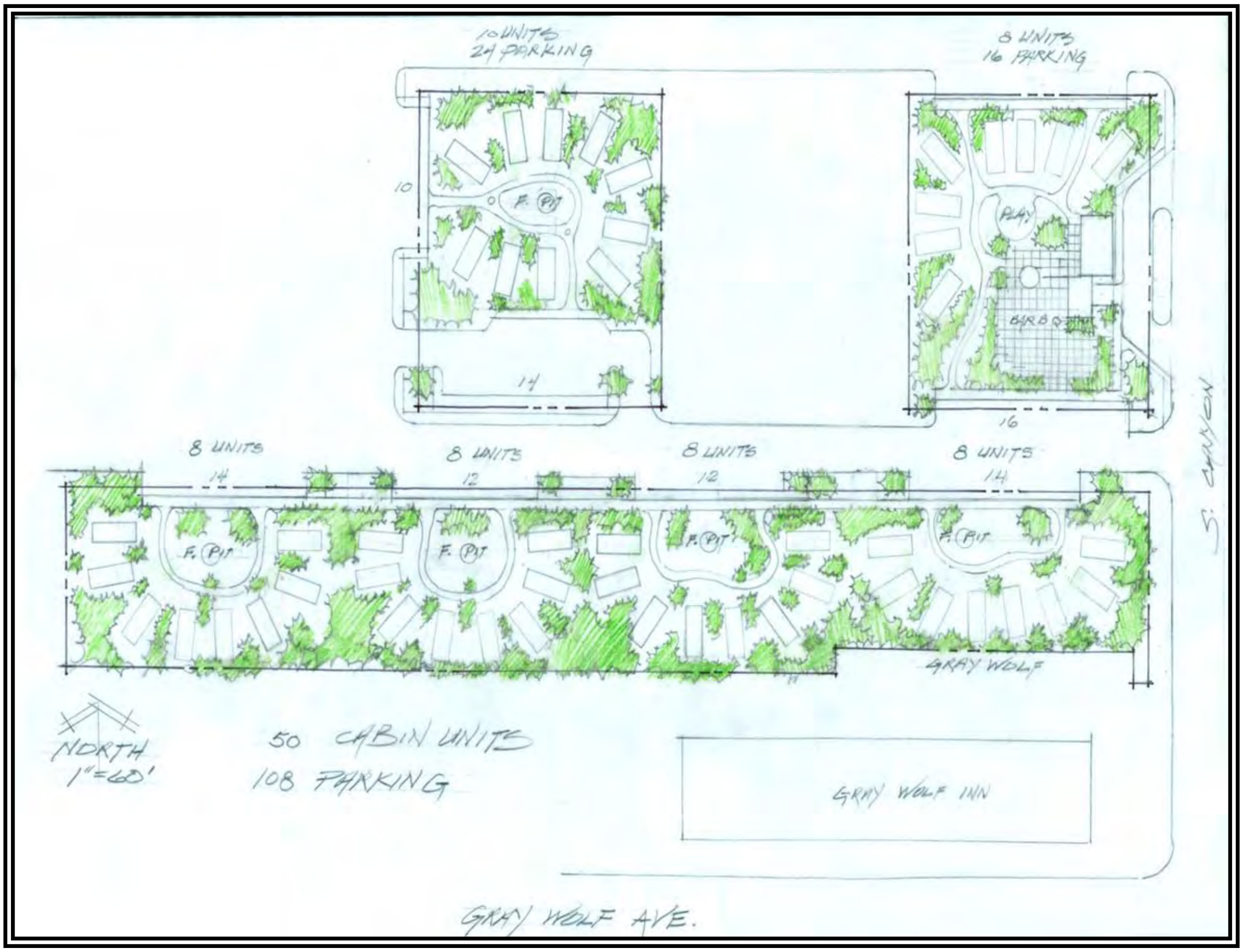


Exterior Rendering of Park Model Unit

Rendering of Interior

Aerial Rendering of Park Model Units in West Yellowstone

Photograph of Recently Built Unit



Layout of 50-Park Model Unit hotel in West Yellowstone