

# RECLAMATION

*Managing Water in the West*

## **Napa Berryessa Resort Improvement District – Water and Wastewater Treatment Upgrades and Expansion**

### **Environmental Assessment**

**January 2013**

**U.S. Bureau of Reclamation, Mid-Pacific Region  
Central California Area Office, CC-400**



U.S. Department of the Interior  
Bureau of Reclamation  
Mid-Pacific Region



## **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 commitment 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.

# Contents

<b>Chapter 1 - Project Description .....</b>	<b>1</b>
1.1 Project Background .....	1
1.2 Statement of Purpose and Need .....	2
1.3 Location and Site Description .....	2
<b>Chapter 2 - Alternatives Including Proposed Action.....</b>	<b>4</b>
2.1 No Action Alternative .....	4
2.2 Proposed Action .....	4
2.2.1 Water Treatment Plant (WTP) Upgrade.....	4
2.2.1.1 WTP Treatment System Upgrade .....	5
2.2.1.2 WTP Building Upgrade.....	5
2.2.1.3 WTP Backwash Pump Station Upgrade.....	5
2.2.2 Backwash Force Main Installation.....	6
2.2.3 Wastewater Treatment Plant Upgrade.....	6
2.2.3.1 Waste Water Treatment Plant (WWTP) Improvements .....	6
2.2.3.2 Pond Removal and Remediation .....	7
2.2.4 Pond Expansion.....	8
2.2.4.1 Pond Expansion.....	9
2.2.4.2 Pond Pump Station Improvements.....	10
2.3 Project Schedule.....	11
<b>Chapter 3 - Affected Environment and.....</b>	<b>12</b>
3.1 Air Quality.....	12
3.1.1 Affected Environment .....	12
3.1.2 Environmental Consequences .....	15
3.1.2.1 No Action .....	15
3.1.2.2 Proposed Action .....	15
3.1.3 Cumulative Effects.....	17
3.2 Biological Resources.....	17
3.2.1 Affected Environment .....	17
3.2.2 Environmental Consequences .....	18
3.2.2.1 No Action Alternative .....	18
3.2.2.2 Proposed Action .....	18
3.2.3 Cumulative Effects.....	22
3.3 Hydrology, Water Quality and Groundwater .....	23
3.3.1 Affected Environment .....	23
3.3.2 Environmental Consequences .....	23
3.3.2.1 No Action Alternative .....	23
3.3.2.2 Proposed Action .....	24
3.3.3 Cumulative Effects.....	25
3.4 Land Use, Planning, and Zoning.....	25
3.4.1 Affected Environment .....	25
3.4.2 Environmental Consequences .....	26
3.4.2.1 No Action Alternative .....	26

3.4.2.2	Proposed Action .....	26
3.4.3	Cumulative Effects .....	26
3.5	Noise.....	27
3.5.1	Affected Environment .....	27
3.5.2	Environmental Consequences .....	28
3.5.2.1	No Action Alternative .....	28
3.5.2.2	Proposed Action .....	28
3.5.3	Cumulative Effects .....	30
3.6	Public Health and Safety .....	30
3.6.1	Affected Environment .....	30
3.6.2	Environmental Consequences .....	31
3.6.2.1	No Action Alternative .....	31
3.6.2.2	Proposed Action .....	31
3.6.3	Cumulative Effects .....	31
3.7	Public Services and Utilities .....	32
3.7.1	Affected Environment .....	32
3.7.2	Environmental Consequences .....	32
3.7.2.1	No Action Alternative .....	32
3.7.2.2	Proposed Action .....	33
3.7.3	Cumulative Effects .....	33
3.8	Recreation Resources .....	33
3.8.1	Affected Environment .....	33
3.8.2	Environmental Consequences .....	34
3.8.2.1	No Action Alternative .....	34
3.8.2.2	Proposed Action .....	34
3.8.3	Cumulative Effects .....	35
3.9	Soils, Minerals, and Geological Resources .....	35
3.9.1	Affected Environment .....	35
3.9.2	Environmental Consequences .....	36
3.9.2.1	No Action Alternative .....	36
3.9.2.2	Proposed Action .....	36
3.9.3	Cumulative Effects .....	38
3.10	Socioeconomics, Population, and Housing .....	38
3.10.1	Affected Environment .....	38
3.10.2	Environmental Consequences .....	39
3.10.2.1	No Action Alternative .....	39
3.10.2.2	Proposed Action .....	39
3.10.3	Cumulative Effects .....	39
3.11	Transportation and Circulation.....	40
3.11.1	Affected Environment .....	40
3.11.2	Environmental Consequences .....	41
3.11.2.1	No Action Alternative .....	41
3.11.2.2	Proposed Action .....	41
3.11.3	Cumulative Effects .....	41

3.12	Visual Resources .....	42
3.12.1	Affected Environment .....	42
3.12.2	Environmental Consequences .....	43
3.12.2.1	No Action Alternative .....	43
3.12.2.2	Proposed Action .....	43
3.12.3	Cumulative Effects .....	45
<b>Chapter 4</b>	<b>- References.....</b>	<b>46</b>
<b>Chapter 5</b>	<b>- Consultation and Coordination.....</b>	<b>48</b>
5.1	Consultation and Coordination.....	48
5.2	Federal, State, and Local Requirements.....	48

# **Chapter 1 - Project Description**

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with granting the Napa Berryessa Resort Improvement District (District) a land-use agreement for the expansion of wastewater ponds, and the acceptance of proposed improvements to the District's water and wastewater systems under existing land-use agreements with Reclamation.

## **1.1 Project Background**

Lake Berryessa is located in Napa County, California. Lake Berryessa has been a popular recreational use area since construction of Monticello Dam was completed. This lake is popular for fishing, boating, picnicking, and camping uses. Lake Berryessa has 165 miles of shore line and a capacity of 1,602,000 acre feet of water.

In 1958, Napa County entered into a management agreement with the Reclamation to administer the recreational development of Federally-owned lands at Lake Berryessa. Under formal concession agreements with the county, seven resorts were developed on 1,700 acres of land and water. During the development of the concession areas, various structures were constructed at the lake, as outlined in the Public Use Plan of 1959 and the concession contracts.

The District was created in 1965 for the purpose of providing water and wastewater service to residential customers and a recreational area located on Reclamation land, formerly known as Steele Park Resort. The District water treatment plant (WTP) and wastewater treatment plant (WWTP) is located on Reclamation land under a permanent easement to the District. The WTP and WWTP currently serves the Berryessa Highlands subdivision, supporting 343 dwelling units with the potential to support up to approximately 562 lots pending upgrades to the existing infrastructure. Waste Discharge Requirement (WDR) Order 95-173, issued by the California Regional Water Quality Control Board (Regional Board), allows the District to treat and dispose of a monthly average flow of 50,000 gallons of treated water per day to four sprayfields. However, due to insufficient wastewater storage, treated wastewater has repeatedly discharged to Lake Berryessa. The Regional Board has issued numerous Notices of Violation (NOV) and three Cease and Desist Orders (CDO) in 1996, 2006 and 2010 in response to the persistent discharges of wastewater to Lake Berryessa.

Prior to 2007, Steele Park Resort contributed to a third of the District's wastewater and water demand. Water and wastewater services were provided to the Steele Park concessionaire as part of the land use agreement that the District has for use of Reclamation land. The Reclamation concession area Lupine Shores (formerly known as Steele Park Resort) is not currently receiving water or wastewater service from the District. The District manages the portion of the sewer collection system serving the Berryessa Highlands subdivision. The portion of the collection system located within Lupine Shores is currently managed by the Bureau of Reclamation and is not in operation.

## **1.2 Statement of Purpose and Need**

The purpose of the Proposed Action is for Reclamation to issue a 25 year license to allow the District to upgrade the WTP and WWTP and associated infrastructure. This upgrade will allow the District to meet the standards of regulating agencies and to meet the current and future needs of the customers within the District's boundaries by increasing the reliability and efficiency of the water and wastewater systems. The District's improvements to the wastewater system are the direct response to the NOV's and CDO's issued by the Regional Board. According to the District, the majority of the violations are due to a lack of storage and disposal capacity. As a result, discharges of wastewater to Lake Berryessa in violation to the facility waste discharge requirements (WDR) have occurred. The proposed upgrades to the WTP are to meet the California Department of Public Works Health (CDPH) guidelines for surface water treatment

## **1.3 Location and Site Description**

The District's proposed improvements will occur in three locations in the land surrounding the southern end of Lake Berryessa. The project area consists of Reclamation-owned lands that are currently under permanent easement to the District, Reclamation-owned land for which a land use agreement has been requested by the District, land owned privately and land owned by the District. Figure 1 shows the location of Lake Berryessa in central California. All activities associated with this EA are in Napa County. The total size of the footprint for the Proposed Action is approximately 12.3 acres.

**Figure 1: Location of Project**

General Location of Lake Berryessa



# **Chapter 2 - Alternatives Including Proposed Action**

This chapter describes the Proposed Action and the No Action Alternative.

## **2.1 No Action Alternative**

Under the No Action alternative, the WTP would not be upgraded with new facilities and equipment. No improvements to the existing WTP building, equipment, ponds or facilities would take place, and CDPH guidelines would not be met. The existing building, equipment, ponds, and facilities would be continued to be used for the foreseeable future.

The backwash force main would not be installed. The existing above-ground backwash line would continue to be used.

The WWTP would not be upgraded with new facilities and equipment, and the existing wastewater pond would not be removed. The District would not be able to implement the improvements mandated by the Regional Board and the State of California.

Three additional wastewater ponds would not be constructed, wastewater storage would not be increased, and a new pond pump to transport wastewater to the site would not be constructed. The current lack of sufficient storage would likely result in future wastewater releases to Lake Berryessa and additional negative action from the Regional Board and the State of California would be likely.

## **2.2 Proposed Action**

### **2.2.1 Water Treatment Plant (WTP) Upgrade**

The federal action associated with the Water Treatment Plant Upgrade aspect of the proposed project is administrative in nature and involves acceptance of improvements to existing District facilities under an existing easement with Reclamation. The District is proposing to replace the existing WTP with new facilities and equipment. These improvements are necessary to meet the CDPH guidelines for surface water treatment. The existing building, equipment, pond, and facilities would no longer be in use. The planned improvements are described below.

### ***2.2.1.1 WTP Treatment System Upgrade***

A Roberts Filter style package treatment plant system would be installed. The system would be sized to handle average and peak potable demand conditions, which would reduce backwash from the existing system that is currently forwarded to the WWTP. Additional utility work would also be performed to support the proposed WTP building. This work would result in ground disturbance of 5 feet or less.

### ***2.2.1.2 WTP Building Upgrade***

Water treatment equipment is currently housed in a building which is undersized for the planned treatment system upgrades. The District proposes to replace the existing WTP building with a new pre-manufactured metal building. This building would house new equipment and the existing chemical feed system that would be relocated from the existing WTP building. The new building would be constructed to the southwest of the existing WTP building and pond in a graded area currently not being utilized by the District. Additional grading, structural slab, and utility work would also be performed to support the proposed WTP building. This work will result in ground disturbance of 5 feet or less.

Cut and fill slopes would range from 3:1 to 10:1. Slopes without surfacing (rock or paving) would be protected from erosion upon completion of grading by the use of Best Management Practices such as hydroseeding. Temporary cut slopes up to 1:1 may be used in accordance with field guidance from the geotechnical engineer.

### ***2.2.1.3 WTP Backwash Pump Station Upgrade***

The existing pond system would be replaced with two steel above ground tanks, one 19,000 gallons and the other 50,000 gallons. Replacement of the ponds with above ground tanks would allow for positive capture of generated wastewater and eliminate storm water contributions to the existing backwash pond system. The new above ground tanks will be constructed to the southwest of the existing WTP building and ponds, and south of the proposed WTP building in a graded area currently not being utilized by the District. Additional grading, structural slab, and utility work will also be performed to support proposed above ground tanks. This work would result in ground disturbance of 5 feet or less.

This work would include one operator, two laborers and one excavator. These proposed actions would all occur within a previously graded gravel area. All staging of materials and equipment would occur within the graded gravel area. No road construction would be necessary to this project. Work would take 7 months and is

expected to take place between February 2013 and October 2013. All work would be completed by December 31, 2013.

### **2.2.2 Backwash Force Main Installation**

The federal action associated with the Backwash Force Main Installation aspect of the proposed project is administrative in nature and involves acceptance of improvements to existing District facilities under an existing permanent easement with Reclamation. The District is proposing to install a new force main for pumping backwash water from the WTP to the WWTP to replace the existing backwash line which is above ground. The proposed force main would be a four inch diameter high density polyethylene (HDPE) pipe laid less than 5 feet underground. The trench for laying the proposed force main would be approximately one foot wide. The alignment of the proposed force main would be 3970 feet using existing easements on Reclamation and private property. Approximately 3200 feet of the proposed force main would be on Reclamation land.

This work would include two operators, three laborers and two excavators. The project area would be accessed from an existing dirt road. Staging of materials would be minimal and would occur immediately adjacent to the proposed force main alignment. No road construction would be necessary to this project. Work would take 1.5 months and is expected to take place between February 2013 and April 2013, weather permitting. It may be necessary to remove some trees located on or adjacent to the project site as they may be affected by construction activities.

### **2.2.3 Wastewater Treatment Plant Upgrade**

The federal action associated with the Wastewater Treatment Plant Upgrade aspect of the proposed project is administrative in nature and involves acceptance of improvements to existing District facilities under an existing easement with Reclamation. The District is proposing to replace portions the existing WWTP. The current state of the facilities has resulted in negative action from the Regional Board and the State of California, both of which are mandating immediate repair of the facilities. The proposed improvements are necessary to correct the deficiencies of the current WWTP. The WWTP is on an existing permanent easement with the District, therefore Reclamation's action is to approve the improvement proposed by the District under the existing easement. The planned improvements are described below.

#### ***2.2.3.1 Waste Water Treatment Plant (WWTP) Improvements***

The existing manual bar screen would be replaced with a rotating drum screen. The screen basket would be cylindrical in shape, and would use a perforated plate with of 0.25 inch diameter holes. The new screen basket would be housed in a concrete

structure. The intent is to re-use the existing concrete structure which is currently used for wastewater treatment to house this screen system. If a new concrete structure is required, it would be constructed east and immediately adjacent to the existing extended aeration basin structure in a graded area currently not being utilized by the District. If the existing structure cannot be re-used the dimension of the new structure are estimated to be 16 feet by 25 feet and 12 feet deep. Additional grading, structural slab, and utility work would also be performed to support proposed screen and concrete bay. This work would result in ground disturbance of 12 feet or less.

A membrane bioreactor style package treatment plant system would be installed to upgrade the WWTP from a secondary effluent treatment facility to tertiary level. The WWTP flow path would be reconfigured to allow for the two existing wastewater ponds of the WWTP to be used for equalization during storm flow conditions. The system would be sized to handle average and peak storm water conditions. The new package treatment plant would be constructed west of the existing WWTP building where a wastewater pond is currently located. Project details regarding the wastewater pond removal and remediation are described below. Additional grading, structural slab, and utility work would also be performed to support the proposed WWTP building. This work would result in ground disturbance of 5 feet or less.

This work would include one operator, two laborers and one excavator. The project and staging area would take place within the previously graded WWTP yard. No road construction will be necessary to complete this project. Work would take 7 months and is expected to take place between February 2013 and October 2013.

#### ***2.2.3.2 Pond Removal and Remediation***

One of the most northerly of the three existing ponds located at the WWTP would be removed and remediated to support the proposed WWTP packaged treatment plant system. The wastewater pond in question is approximately 70 feet long, 40 feet wide and 15 feet deep. This wastewater pond, which is regulated by WDR Order 95-173, will be removed and remediated in accordance with the Regional Board's approval of the District's sampling and work plan.

Cut and fill slopes range from 1% to 10%. Slopes without surfacing (rock or paving) would be protected from erosion upon completion of grading by implementation of appropriate Best Management Practices. Temporary cut slopes up to 1:1 may be used in accordance with field guidance from the geotechnical engineer. Portions of the site are blanketed by relatively thick accumulations of colluvium and landslide debris. Remedial earthwork per the geotechnical recommendations shall take place in these areas to provide a stable surface for areas in which improvements are taking place.

The District would remove the concrete and synthetic liner from the wastewater pond, and test the underlying soil for contamination. The soils would be tested for fecal coliform and heavy metal concentration including arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium and zinc. If the soil contains heavy metal exceeding the state contamination levels allowable for soils, the soil would be removed for offsite disposal at a hazardous material landfill. If the soil tests positive for fecal coliform, it would be remediated with a treatment of chlorine or lime. If necessary, the District would sample and remove any nuisance water from the pond and dispose of it properly. The depth of excavated material is expected to be less than one foot but would be dependent on sampling results. It is estimated that the District may remove approximately 100 cubic yards of liner and soils. All hazardous and non-hazardous materials would be stored and transported appropriately and disposed of at a qualified disposal site. The project includes the development of a site specific health and safety plan for all on-site activities including initial sampling. The health and safety plan would address the handling of any hazardous materials project sites. This work would include one operator, one laborer and one excavator. The project and staging area would occur with the previously graded WWTP yard. No road construction would be necessary to this project. Work will take 10 days and is expected to take place between February 2013 and April 2013.

Following the removal of the wastewater pond liner and proper remediation of the site, the District would scarify the pond bottom in preparation for the backfill operation. The District would use clean fill material from a District parcel to the south of the WWTP to backfill the pond, transporting the fill material using dump trucks. Each lift would be compacted using a vibratory pad foot compaction roller with a grading blade to spread and compact the material and in accordance with geotechnical recommendations. This work would include two operators, two laborers, two dump trucks with drivers, one excavator, one compaction roller and one water truck. Work will take 2 months and is expected to take place between February 2013 and April 2013. Best Management Practices (BMP's) will be installed prior to the start of construction to protect the site in accordance with Napa County and State guidelines for stormwater protection. BMPs include fiber rolls around the perimeter of all work areas, a concrete washout, stabilized construction entrances and exits, and a designated fuel loading area. Following completion of backfill, the former pond area would be sprayed with hydroseed to prevent erosion.

#### **2.2.4 Pond Expansion**

The federal action associated with the Pond Expansion aspect of proposed project is administrative in nature and involves the issuance of a 25-year license to the District to allow the District sufficient space to complete the proposed project. The District is proposing to create three wastewater ponds to increase treated wastewater effluent storage, and to construct a new pond pump house to transport wastewater to the

existing disposal field. The current lack of sufficient storage has resulted in wastewater releases to Lake Berryessa and has resulted in negative action from the Regional Board and the State of California. The proposed project was designed to meet regulatory constraints and to provide additional operational flexibility. The proposed pond expansion is on District land, private land, and Reclamation land for which the District has requested a land-use agreement. The planned improvements are described below.

#### ***2.2.4.1 Pond Expansion***

The capacity of the pond system would be expanded from the existing tailwater pond and three new wastewater ponds would be created, increasing storage from 1.3 million gallons to 22.3 million gallons. The ponds would receive approximately 33.4 million gallons of treated wastewater annually at full-build out, and 39.2 million gallons during a 100-year flood condition. Wastewater disposal would be achieved through evaporation and sprayfield dispersal. The wastewater ponds would have a synthetic liner to protect groundwater quality, and would be surrounded by fencing. The combined surface area of the three constructed ponds is 3.8 acres, which would be excavated to a depth of 25 to 31 feet and surrounded by earthen berms to increase storage. The existing tailwater pond (Pond 1) would be expanded and is on District property.

Pond 4 would be located on a hill adjacent to Steele Canyon Road, and the internal dimensions would be approximately 530 feet long and 250 feet wide, with an irregular shape to contour to the existing grade. The pond would be surrounded earthen berms which would be less than 25 feet higher than the existing grade. Excavation of Pond 4 will create an internal depth less than 25 feet. The pond would not be visible from Steele Canyon Road due to the existing topography.

Ponds 2 and 3 would be located in a low area between hills and adjacent to Steele Canyon Road. Pond 2 internal dimensions would be approximately 280 feet by 180 feet, and Pond 3 internal dimensions would be approximately 250 feet long and 170 feet wide. The ponds would be created by excavating 20 feet below the existing grade and by constructing berms surrounding the ponds for a final pond depth of approximately 31 feet. The berms would be 20 to 100 feet high with grades of 50% to 70%, with the toe of the highest berm less than 100 feet from Steel Canyon Road. The ponds would not be visible from Steele Canyon Road due to the height of the berms. The proposed action would raise the area by 20 to 100 feet above the existing grade. The proposed action would necessitate the rerouting of an ephemeral stream located on Reclamation land.

The District would excavate a total of approximately 184,000 cubic yards of soils which would be used to construct the berms and for earthwork including excavation and re-compaction. A road would be built around the top of each pond, tying into

the existing access road. The road would be graded back toward the ponds to prevent erosion of the outer embankment during storm events. All excavated soil would be utilized as fill for the fill slope earthen berms, therefore there would be no import or export soils. No remaining excavated soil would remain onsite and unutilized following the completion of the proposed action. This work would include 5 operators, 2 laborers, 1 excavator, 1 dozer, 1 compaction roller, 1 water truck and 2 scrapers. The project and staging area would occur with the previously graded WWTP yard. The existing access road would be used to access the project site. Work would take 7 months and is expected to take place between February 2013 and October 2013. Pre-existing trees or brush in the ponds would need to be removed. These trees and bushes would be surveyed prior to removal for nesting birds and most clearing activities will occur from September 1 to February 15 which is typically outside the bird breeding season. All berms and cut and fill slopes will be planted with a native seed mix.

#### ***2.2.4.2 Pond Pump Station Improvements***

A new pump house would be constructed to house the equipment necessary to pump treated wastewater from the WWTP to the existing sprayfield. To construct the new pump house a level pad would be constructed. Excavated material from the proposed wastewater ponds would be used to create an access road and 30 foot by 40 foot level area. A concrete pad would be laid in the level area, and the access road would be paved. Excavation for the pad and road is not expected to exceed 10 feet below the existing grade. The existing pump house and equipment would be relocated and pump effluent from the new ponds to the existing spray fields or a new pump would be purchased. Electrical power from PG&E would also be brought into the new and existing pump house areas to improve reliability over the existing diesel powered system. The project and staging area would be located at the pond expansion area. Work would take 2 months and is expected to take place between May 2013 and July 2013, and would utilize staff identified for the pond expansion. It may be necessary to remove some pre-existing trees located on or adjacent to the project site as they may be affected by construction activities. All berms and cut and fill slopes will be planted with a native seed mix.

## **2.3 Project Schedule**

It is estimated that this project would require up to 9 months for completion, starting in February 2013 through to completion by October 2013. All work would be completed by December 31, 2013.

### **Water Treatment Plant Upgrade**

Expected construction duration: February 2013 – October 2013

### **Backwash Force Main Installation**

Dates of potential tree removal: January 2013 – February 2013  
Expected construction duration: February 2013 – October 2013

### **Wastewater Treatment Plant Upgrade**

Expected construction duration: February 2013 – October 2013

### **Pond Expansion**

Dates of potential tree removal: January 2013 – March 2013  
Expected construction duration: February 2013 – October 2013

### **Pond Pump Station Improvements**

Dates of potential tree removal: January 2013 – March 2013  
Expected construction duration: May 2013 – July 2013

# Chapter 3 - Affected Environment and Environmental Consequences

This EA does not analyze resources for which it would be reasonable to assume that no impacts would occur from implementation of the Proposed Action.

The following resources were considered and determined to have no impacts as a result of implementation of the Proposed Action. These resources are as follows:

***Cultural Resources***- In an effort to identify historic properties, Reclamation and the NBRID have completed a cultural resource inventory of the proposed project area including a comprehensive records search, cultural resource pedestrian survey, geoarchaeological review, and Native American consultation. Reclamation has reached a finding of no historic properties affected for this proposed undertaking.

***Environmental Justice*** – Minority or low income populations would not be differentially affected within the project area and therefore no environmental justice impacts would occur.

***Hydropower*** – The Proposed Action would not change Lake Berryessa operations or water levels; therefore it would not impact hydropower production.

***Indian Trust Assets (ITAs)*** – No ITAs exist within or near the project site so no impacts to ITAs would occur. The nearest ITA is Rumsey Rancheria approximately 25 miles north of the Project Area.

## 3.1 Air Quality

This section presents the affected environment and environmental consequences for air quality.

### 3.1.1 Affected Environment

Napa County (county surrounding proposed Project Area), is located in the San Francisco Bay Air Basin (SFBAB), where air quality is monitored and regulated by the Bay Area Air Quality Management District (BAAQMD). Air quality in the SFBAB is heavily influenced by weather conditions, particularly climate and wind patterns. Summers in the SFBAB are hot and dry in the inland areas, and winters are typically cool and wet. In summer, a northwest wind originates off the coastline and is drawn inland and over the lower portions of the San Francisco Peninsula, carrying pollutants from the San Francisco area. The mountains that surround Lake Berryessa are effective barriers to the prevailing northwesterly winds, but an up-valley wind

frequently develops during warm summer afternoons which draw air from the San Pablo Bay. The wind patterns and topography contribute to the buildup of high concentrations of emitted pollutants in the Bay Area (BAAQMD 1999).

The U.S. Environmental Protection Agency (EPA) and the State have designated National and California Ambient Air Quality Standards, respectively, to protect public health and welfare. The EPA currently focus on the following “critical air pollutants” as indicators of ambient air quality: O<sub>3</sub> (ozone), CO (carbon dioxide), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM), and lead. EPA has established primary and secondary national ambient air quality standards (NAAQS) for the following criteria air pollutants: O<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, fine particulate matter (PM<sub>2.5</sub>), and lead. The primary standards protect the public health and the secondary standards protect the public welfare.

The California standards are more stringent than the national standards. Because of the buildup of high concentrations of pollutants, Napa County is designated as nonattainment for ozone under the national standards and is designated nonattainment for ozone, fine particle pollution (PM<sub>2.5</sub>), and respirable particulate matter (PM<sub>10</sub>) under the California standards. The nonattainment status means that air quality exceeds the national or California standards.

Air quality is monitored at one location in Napa County: the Napa-Jefferson Avenue monitoring station, approximately 15 miles south of Lake Berryessa. This monitoring station records measurements for ozone (hourly) and PM<sub>10</sub>. Occasionally during hot summer afternoons, ozone concentrations approach and sometimes exceed the California standard. According to monitoring data from 2007-2009, Napa County experienced one day that exceeded the California one-hour standard (California Air Resources Board 2009). The highest PM concentrations occur in the winter, particularly during evening and nighttime hours. The County experienced one day that exceeded the California PM<sub>10</sub> measured standard between 2007 and 2009. The federal standards were not exceeded during that monitoring period.

In Napa County, the primary sources of pollutants are motor vehicles, combustion products from fuel, consumer products, wood smoke, and construction-related dust (BAAQMD 2000). Sensitive receptors to air pollutants in or near the proposed project area include residents, recreationists and onsite staff.

For any individual project the Threshold of Significance for project operations are described in Table 1: Thresholds of Significance for Project Operations.

**Table 1: Thresholds of Significance for Project-Level Activities (from BAAQMD 2010: Table 2-4)**

Pollutant	Construction-Related	Operational-Related	
		Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
Criteria Air Pollutants and Precursors (Regional)	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
ROG	54	54	10
NOX	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
PM10/PM2.5 (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
GHGs – Projects other than Stationary Sources	None	Compliance with Qualified GHG Reduction Strategy OR 1,100 MT of CO2e/yr OR 4.6 MT CO2e/SP/yr (residents+employees)	
GHGs –Stationary Sources	None	10,000 MT of CO2e/yr	
Risk and Hazards for new sources and receptors (Individual Project)	Same as Operational Thresholds**	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM2.5 increase: > 0.3 µg/m3 annual average Zone of Influence: 1,000-foot radius from property line of source or receptor	
Risk and Hazards for new sources and receptors (Cumulative Threshold)	Same as Operational Thresholds**	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) PM2.5: > 0.8 µg/m3 annual average (from all local sources) Zone of Influence: 1,000-foot radius from property line of source or receptor	

Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials locating near receptors or new receptors locating near stored or used acutely hazardous materials considered significant
Odors	None	5 confirmed complaints per year averaged over three years

CEQA = California Environmental Quality Act; CO = carbon monoxide; CO<sub>2e</sub> = carbon dioxide equivalent; GHGs = greenhouse gases; lb/day = pounds per day; MT = metric tons; NO<sub>x</sub> = oxides of nitrogen; PM<sub>2.5</sub> = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM<sub>10</sub> = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases; SO<sub>2</sub> = sulfur dioxide; SP = service population; TACs = toxic air contaminants; TBP = toxic best practices; tons/day = tons per day; tpy = tons per year; yr = year; TBD = to be determined.

\*It is the Air District's policy that the adopted thresholds apply to projects for which a Notice of Preparation is published, or environmental analysis begins, on or after the applicable effective date. The adopted CEQA thresholds – *except for the risk and hazards thresholds for new receptors* – are effective June 2, 2010. The risk and hazards thresholds for new receptors are effective May 1, 2011.

\*\* The Air District recommends that for construction projects that are less than one year duration, Lead Agencies should annualize impacts over the scope of actual days that peak impacts are to occur, rather than the full year.

### 3.1.2 Environmental Consequences

#### 3.1.2.1 No Action

There would be no change to the affected environment. Air quality impacts under the No Action Alternative would not exceed national or California standards, or contribute substantially to Napa County's existing nonattainment status.

#### 3.1.2.2 Proposed Action

Air quality impacts associated with the Proposed Action would result from short term construction-related emissions, including dust and vehicle emissions. Construction activities would result in the temporary generation of reactive organic gases, (contributing to ozone), oxides of nitrogen, and PM<sub>10</sub> emissions from site preparation and compaction and from motor vehicle exhaust associated with construction equipment and employee commute trips.

U.S. EPA has developed an approximate emission factor for construction-related emission of fugitive dust or total suspended particulate. The approximate emission factor is 0.77 tons per acre per month of activity. It is projected that the site will be approximately 12.3 acres in size and construction will last for approximately 9 months. Using this information it is estimated that the emission factors for uncontrolled construction-related PM<sub>10</sub> emissions is 85.2 tons of PM<sub>10</sub>.

However it is standard construction practice to control fugitive dust. The enhanced control measures encouraged by BAAQMD for construction sites greater than four

acres will be implemented in the proposed action. These measures may include the following:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten day or more).
- Enclose, cover, and water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved road to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

The threshold for air quality impacts is for PM<sub>10</sub> emissions is 15 tons which indicates that fugitive dust could be a significant impact. However the project will be controlling the emission of fugitive dust by using a series of control measures for dust control. These control measures are effective strategy of reducing dust impacts and when implemented correctly minimize the impact of fugitive dust to less than significant levels. (The BAAQMD which regulates air quality in the greater SFBAB area states in their guidance documents that, “If all of the control measures will be implemented, then air pollutant emissions from construction activities would be considered a less than significant impact” (BAAQMD 1999). Therefore impacts from fugitive dust are considered less than significant as the Proposed Action will implement enhanced dust control measures.

Impacts to air quality and climate change associated with the Proposed Action would result from vehicle emissions from employee commuting to the Project Area and construction activities. These activities are considered construction-related and would result in the temporary generation of greenhouse gases (GHGs), reactive organic gases (ROGs), oxides of nitrogen (NOX), PM<sub>2.5</sub> and PM<sub>10</sub> emissions during the 9 month duration of the Proposed Action. The Proposed Action will not result in any additional emissions associated with operation of the District’s facilities. It is estimated that with the level of construction related activities described in the Proposed Action, the number of staff required, the distance of staff commute, and the duration of the project, the Proposed Action is below the annual thresholds for air pollutants set by the BAAQMD. There are temporary and short-term impacts associated with the Proposed Action causing a temporary increase of GHGs, but do not approach the time scale necessary to negatively impact climate change. No

threshold of significance has been established by the BAAQMD for construction-related GHGs. Therefore the impact of the Proposed Action to air quality and climate change is less than significant. Should activities associated with the Proposed Action change or be determined to approach or exceed the threshold of significance for any of these pollutants, additional environmental analysis may be necessary and all required air quality permits from the BAAQMD will be obtained.

### **3.1.3 Cumulative Effects**

Although the construction of the Proposed Action would lead to some impacts to air quality, these impacts would be short term impacts and limited to the project area. Emission levels will remain below threshold levels during the entirety of this project. Since the project will remain below threshold levels of emissions, the Proposed Action is not expected to contribute impacts cumulatively to air quality.

## **3.2 Biological Resources**

This section presents the affected environment and environmental consequences for biological resources. The information analyzed in this section also meets the needs for a biological assessment under the Endangered Species Act and may form the basis to find no effect to listed species or their habitat.

### **3.2.1 Affected Environment**

The Project Areas are the lands that surround the southern portion of Lake Berryessa, and are within and adjacent to the Berryessa Highlands housing development and the Steele Park/Lupine Shores concession area. These areas are predominately vegetated by annual grasslands and oak woodlands. These habitats support a diversity of plant and wildlife species. Portions of the habitats in and near the project areas have been heavily disturbed by roads and other human activities, resulting in several populations of invasive and weedy plants. Based on the results the botanical survey performed by Kjeldsen Biological Consulting (Kjeldsen 2012), no special-status plants, including federally listed threatened or endangered species, are known to occur in the Project Area. The Project Area is located within the sub-watershed of the Lake Berryessa – Steele Canyon Arm Drainage, which has not been designated as critical habitat for steelhead. There are no habitat conservation plans, natural community conservation plans or similar plans applicable to the Project Area. No wetlands or potential wetlands have been identified within the Project Area.

Common annual grasslands plants include ripgut brome (*Bromus diandrus*), soft brome (*B. hordeaceus*), black mustard (*Brassica nigra*), medusahead grass (*Taeniatherum caput-medusae*), and wild oat (*Avena fatua*). Overstory vegetation in the oak woodlands is predominately composed of valley oak (*Quercus lobata*), with the occasional interior live oak (*Q. wislizenii*), blue oak (*Q. douglasii*), and grey pine

(*Pinus sabiniana*). The understory vegetation consists of annual grasses and forbs similar to the grasslands. Tamarisk (*Tamarix parviflora*), an invasive plant, occurs near the shoreline of Lake Berryessa outside of the project areas, and yellow-star thistle (*Centaurea solstitialis*), another invasive plant, is common throughout the Lake Berryessa area.

The California Natural Diversity Database (CNDDDB) was reviewed on October 2, 2012 and no federally or state-listed animals are found to occur in or near the project area based on the types of habitat present. The nearest sensitive species is located 0.5 miles to the south of the Project Area.

Kjeldsen conducted a botanical survey and habitat assessment multiple times. The dates ranged from March 28, April 27, May 22, June 6, and again on August 20, 2012. The survey included a search of the proposed Pond Expansion area for sensitive plant species identified by the California Department of Fish and Wildlife (DFW) CNDDDB and the California Native Plant Society database (CNPS). The study considered the direct and indirect impacts of the proposed project on vegetative communities, wildlife habitats, special-status plant and animal species, aquatic resources, and wildlife movement corridors. The botanical survey was conducted identifying and recording all species on the site and in the near proximity.

The CNDDDB database identified the potential presence of 12 animal species in the proposed Pond Expansion area. Existing site conditions were used to identify habitat which could potentially support special status species. Animals were identified in the field by observation, signs or calls. Additionally, trees were surveyed to determine whether occupied by nesting raptors. Through the surveys conducted by Kjeldsen it was determined that there is a lack of suitable habitat present for listed animal species.

### **3.2.2 Environmental Consequences**

This section presents the environmental consequences of the Proposed Action and the No Action Alternative.

#### **3.2.2.1 No Action Alternative**

Under the No Action Alternative, there would be no construction of the WTP and WWTP improvement, and no pond expansion, therefore, there would no impacts to biological resources.

#### **3.2.2.2 Proposed Action**

The Proposed Action for the WTP and WWTP improvements take place within previously developed areas, and no vegetation removal or trimming is expected. If it

is necessary to remove some existing trees located on or adjacent to the project site, these trees and bushes will be surveyed prior to removal for nesting birds and most clearing activities will occur from September 1 to February 15 which is typically outside the bird breeding season. During the breeding season, (February 15 to August 31), trees and brush will only be removed on a case-by-case basis after a qualified biologist has surveyed the vegetation to verify that no nesting migratory birds are utilizing the area.

The Backwash Force Main Installation will take place in undeveloped woodland area. It may be necessary to remove some existing trees located on or adjacent to the project site as they may be affected by construction activities. These trees and bushes will be surveyed prior to removal for nesting birds and most clearing activities will occur from September 1 to February 15 which is typically outside the bird breeding season. During the breeding season, (February 15 to August 31), trees and brush will only be removed on a case-by-case basis after a qualified biologist has surveyed the vegetation to verify that no nesting migratory birds are utilizing the area.

The Pond Expansion includes earthmoving activities associated with the expansion of the District wastewater treatment facility to include three new effluent ponds, and the expansion of the existing tailwater pond within an area approximately 10.9 acres, including the conversion of grassland and oak woodland. All wastewater ponds will be fenced, preventing species becoming trapped in the wastewater ponds. Kjeldsen identified the potential presence of 32 plant species through the CNDDDB search, and two plant communities on-site, generally consisting of oak woodland and grassland. The Proposed Action will require the removal of approximately 150 oak trees and additional pine trees. The proposed action will also require the rerouting of two drainages, totaling 730 linear feet of riparian habitat.

Although the biological resource survey did not identify suitable habitat for breeding and/or nesting special status bird species within the project area, noise generated through grading and ground disturbing activities has the potential to affect resources adjacent to the project site for special-status bird species. Potential impacts resulting from temporary and intermittent increase in noise levels may cause nest abandonment and death of young or loss of reproductive potential at active nests located near project activities. Napa County policies limit grading and vegetation removal to non-winter months (April 1 through October 15). The Proposed Action will implement standard mitigation for raptors and bats, including mitigation measures BIO-1 and BIO-2.

#### **Mitigation Measure BIO-1**

A qualified biologist shall conduct a habitat assessment for potential suitable bat habitat within six months of project activities. If the habitat assessment reveals suitable habitat, a qualified biologist shall conduct a presence/absence survey

during peak activity periods. If bats are found to be present during peak activity periods, the qualified biologist shall submit an avoidance plan to the County and DFW for approval. The avoidance plan should evaluate the length of time disturbance, equipment noise and type of habitat present at the Project site. In the event the bat avoidance measures required by DFW result in a reduction or modification of project boundaries, the plan shall be revised by the applicant/engineer and submitted to the County (Napa County 2012.)

**Mitigation Measure BIO-2**

For earth-disturbing activities occurring February 15 through August 31, a qualified wildlife biologist shall conduct preconstruction surveys for special status birds and their nests within 500-feet of earthmoving activities. The preconstruction survey shall be conducted no more than 14 days prior to vegetation removal and ground disturbing activities are to commence (surveys should be conducted a minimum of 3 separate days during the 14 days prior to disturbance).

If active nests are found during preconstruction surveys, a 300-foot no-disturbance buffer will be created around active raptor nests and a 50-foot buffer zone shall be created around the nests of all other migrating birds during the breeding/nesting season or until it is determined by a qualified biologist that all young have fledged. These buffer zones may be modified in coordination with DFW based on existing conditions at the project site. Buffer zones shall be fenced with temporary construction fencing and remain in place until the end of the breeding season or until young have fledged. If a 15 day or greater lapse of project-related work occurs during the breeding season, another bird preconstruction survey and consultation will be required before project work can be reinitiated (Napa County 2012.)

The Project Area for the Pond Expansion consists of grassland and oak woodland. The Proposed Action will result in the conversion of 6 acres of oak woodland to three effluent ponds, and the expansion of the existing tailwater pond for storage and disposal of treated wastewater. Portions of the oak woodland proposed for removal are riparian habitat and habitat connectivity to upstream and downstream resources. Pursuant to Napa County General Plan Policy CON-24, where complete avoidance is not feasible, oak woodlands shall be preserved or enhanced through restoration and replant at a 2:1 ratio on a per acre basis. To offset the loss of 6 acres of oak woodland and riparian habitat mitigation measures BIO-3 and BIO-4 will be implemented.

**Mitigation Measure BIO-3**

An Oak Mitigation Plan shall be developed by a qualified biologist submitted for approval to Reclamation prior to beginning the project. All oak trees removed from Reclamation land will be replaced on Reclamation at a ratio of 2:1,

pursuant to Napa County General Plan Policy CON-24. The District shall retain a qualified biologist or ecologist to develop an enhancement plan. At a minimum the enhancement plan shall include planting guidelines, planting survival rate of 80% or greater over a three to five year period, and monitoring and reporting program to be submitted to Reclamation annually. Once the enhancement plan has been approved by Reclamation, implementation shall be initiated within the 1 year of completion of the Proposed Action.

All trees proposed for retention that are located adjacent to the Project Area shall be avoided, including any trees with trunks located outside the project boundary that have driplines that extend into the Project Area. Prior to any earthmoving activities, construction fencing (or equivalent barricades) shall be placed at minimum distance of 5 feet outside the outboard driplines of the trees to be retained for the duration of earthmoving and construction activities associated with the project. The placement of such fencing shall be inspected and its location by Napa County prior to commencing any ground disturbing activity. No disturbance, including grading, placement of fill material, and storage of equipment shall occur with the driplines of those trees to be retained for the duration of construction activities (Napa County 2012.)

Approximately 730 linear feet of the drainage will be modified routing the drainage around the wastewater pond expansion, altering the drainage pattern and removing vegetation. Modification of streams or waterways is regulated under several federal and state statutes, including section 404 of the federal Clean Water Act and Section 1600 under DFG code. Section 404 of the Clean Water Act authorizes the Secretary of the Army, acting through the Army Corp of Engineers (USCOE), to issue permits regulating the filling or modification of streams or waterways including those defined as Waters of the United States. Under similar circumstances where waters were filled or modified, the USCOE has considered a variety of methods to ensure mitigation of impacts provide adequate compensation for the loss of physical and biological functions and services within a project area. To address impacts, at a minimum the USCOE will require mitigation at a 1:1 ratio of functional units lost. In this case, approximately 730 linear feet of Waters of the US that would require replacement or enhancement within an existing impaired watercourse onsite or an approved off-site location.

All appropriate permits will be obtained from DFW and USCOE by the District prior to beginning the project. All necessary mitigation plans required by DFW and USCOE will be completed and provided to Reclamation for approval prior to beginning the Proposed Action. The District will implement mitigation measures BIO-3 and BIO-4 to offset any losses to riparian habitat.

#### **Mitigation Measure BIO-4**

To ensure that all Waters of the U.S that could be directly or indirectly impacted by the project have been identified, the District's biologist shall delineate all Waters of the U.S. within the project site proposed for disturbance and surrounding buffers. The biologist shall consult with the USCOE prior to the modification of identified channel, including surrounding vegetation within 30 feet of the high water mark of jurisdictional Waters of the U.S. A Section 1602 Lake and Streambed Alteration Agreement (LSAA) shall be obtained from DFW prior to construction activities that alter the bed or bank of streams. The compensatory mitigation for the modification of Waters of the US shall be implemented onsite through the enhancement and replacement of the blue lined stream located northeast of the project site, to its original path through the decommissioning of the existing tailwater pond. Replacement shall be a minimum of 1:1 in kind in consultation with USCOE and DFW prior to altering the bed or bank of a stream (Napa County 2012.)

Equipment, construction material, fill and construction staff can serve as a vector to invasive species and therefore pose a risk to biological resources. The District will implement mitigation measure BIO-5 to prevent the spread of invasive species. In addition to mitigation measure BIO-5, all berms and cut and fill slopes will be covered planted with a native seed mix.

#### **Mitigation Measure BIO-5**

All equipment will be clean of all invasive seeds and media which can host invasive seeds and species including, but not limited to, soil, plant material and water. Any fill or other construction material will be certified as clean fill free of any invasive species. No uncertified fill will be brought onsite for storage or use. Any seed mixes used will be certified as native species and free of nonnative species.

Based on the lack of species of concern or habitat within the Project Area, the District acquiring all necessary permits from DFW and USCOE , and implementation of mitigation measures BIO-1, BIO-2, BIO-3 BIO-4 and BIO-5, the Proposed Action will not result in significant changes in habitat for local wildlife.

### **3.2.3 Cumulative Effects**

The Proposed Action may allow for additional residential development within the Berryessa Highlands subdivision and at the Steele Park/Lupine Shores concession area. Napa County oversees the development of private land in the area serviced by the District. Napa County has zoned the area for residential development and has completed a General Plan which recognizes the development of the Berryessa Highlands subdivision. Any development within the Steele Park/Lupine Shores concession area will be covered by additional NEPA analysis. Therefore, the

Proposed Action is not expected to contribute any substantial cumulative biological resource impacts.

### **3.3 Hydrology, Water Quality and Groundwater**

#### **3.3.1 Affected Environment**

Lake Berryessa has a storage capacity of 1,600,000 acre-feet (AF) at an elevation of 440 feet mean sea level (MSL). The average annual inflow to the reservoir is 369,000 AF and the annual firm yield is 201,000 AF. An additional release of 22,000 AF is required annually to meet prior downstream water rights along Putah Creek. An upstream reservation of 33,000 AF was established by the State Water Resources Control Board to provide water for future development of the area above Monticello Dam. The reservoir water level may fluctuate from a maximum of 455 feet to a minimum elevation of 253 feet MSL.

The water supply for Lake Berryessa is provided by the 568-square-mile drainage basin above the dam. The elevation of the basin ranges from 182 feet at the base of the dam to 4,722 feet at the upper end of Putah Creek, with most of the basin lying below 1,500 feet. There are four principal creeks that flow into Lake Berryessa: Capell Creek, Pope Creek, Eticuera Creek, and Putah Creek. Putah Creek is the main drainage of the basin. The Project Area is located within the sub-watershed of the Lake Berryessa – Steele Canyon Arm Drainage. There are three blue-lined streams that traverse the Project Area and are tributaries to Capell Creek. Capell Creek flows northeast into Berryessa Lake.

The District under WDR Order 95-173 issued by the Regional Board, allows the treatment and disposal of a monthly average flow of 50,000 gallons of treated water per day to four sprayfields. According to the Regional Board the District has been in violation with the WDR since approximately 1995. The majority of the violations are due to a lack of storage and disposal capacity resulting in significant discharges of wastewater to Lake Berryessa, including the discharge of approximately 1.4 million gallons of treated effluent to Lake Berryessa from January through June 2010.

#### **3.3.2 Environmental Consequences**

##### ***3.3.2.1 No Action Alternative***

Under the No Action Alternative, no improvements would be made to the WTP, the WWTP or wastewater storage. The District would be unable to comply with the NOV's, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment. Future discharges of wastewater could occur

due to insufficient wastewater storage, causing negative impacts to hydrology, water quality and groundwater.

### **3.3.2.2 Proposed Action**

The purpose of the Proposed Action is to improve water quality by improving water and wastewater treatment, and wastewater retention by the District. The Proposed Action is in direct response to the Regional Board CDOs that mandate the District rectify storage and disposal capacity for treated effluent. The ponds will receive approximately 33.4 million gallons of treated effluent annually at a full build out, which will increase the system capacity to 39.2 million gallons accounting for inflow and infiltration, stormwater into the ponds, and evaporation out of the ponds. The system will utilize the existing four sprayfields to prevent future discharge of treated effluent downstream to Lake Berryessa. The Proposed Action would not be expected to impact local groundwater. All wastewater is stored within impermeable liners, and the Regional Board regulates the disposal of wastewater to have no impact on groundwater resources. The Proposed Action has been designed with Best Management Practices (BMPs) to prevent sediment, runoff, and pollutants from leaving the Project Area.

Approximately 730 linear feet of the drainage will be modified routing the drainage around the wastewater pond expansion, altering the drainage pattern and removing vegetation. Modification of streams or waterways is regulated under several federal and state statutes, including section 404 of the federal Clean Water Act and Section 1600 under DFW code. Section 404 of the Clean Water Act authorizes the Secretary of the Army, acting through the USCOE, to issue permits regulating the filling or modification of streams or waterways including those defined as Waters of the United States. Under similar circumstances where waters were filled or modified, the USCOE has considered a variety of methods to ensure mitigation of impacts provide adequate compensation for the loss of physical and biological functions and services within a project area. To address impacts, at a minimum the USCOE will require mitigation at a 1:1 ratio of functional units lost. In this case, approximately 730 linear feet of Waters of the US that would require replacement or enhancement within an existing impaired watercourse onsite or an approved off-site location. All appropriate permits will be obtained from DFW and USCOE by the District prior to beginning the project. All necessary mitigation plans required by DFW and USCOE will be completed and provided to Reclamation for approval prior to beginning the Proposed Action.

A Stormwater Quality Management Plan (SQMP) and Construction Activities Storm Water General Permit will be required prior to beginning the Proposed Action. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and submitted to Reclamation prior to any earth movement. The SWPPP will be fully completed and submitted to the Regional Board, and ready for the Central California Area

Manager's signature as the Legally Responsible Person. Appropriate Best Management Practices (BMPs) will be installed prior to the start of construction to protect the site in accordance with Napa County and State guidelines for stormwater protection. BMPs include fiber rolls, silt fences, and other measure around the perimeter of all work areas, a concrete washout, stabilized construction entrances and exits, and a designated fuel loading area. All berms and cut and fill slopes will be covered planted with a native seed mix. The implemented BMPs will be designed to insure that all sedimentation and/or pollution as a result of stormwater runoff will remain within the Project Area. The Proposed Action does not require the use of chemicals.

Based on the purpose and design of the Proposed Action, as well as the BMP and appropriate permits to be obtained prior to the beginning of the construction, the Proposed Action will have a positive impact on hydrology, water quality and groundwater.

### **3.3.3 Cumulative Effects**

The hillsides adjacent to the Pond Expansion area are subject to debris flow landslides during rain events. In the event of heavy precipitation and a seismic event, the Proposed Action for the Pond Expansion could cause localized flooding if the retaining walls and levee system failed. In the event of retaining wall and levee system failure, debris and treated wastewater could impede travel on Steele Canyon Road and the entrance to Steele Park/Lupine Shores concession area. There are no structures located downstream of the Pond Expansion. Steele Canyon Road would likely convey water, wastewater and debris from the ponds to Lake Berryessa in the event of such a failure, causing temporary impacts to hydrology and water quality. This failure is unlikely and not a significant change due to the current geologic conditions onsite, therefore is not a significant impact to hydrology, water quality and groundwater.

## **3.4 Land Use, Planning, and Zoning**

### **3.4.1 Affected Environment**

The Project Area and surrounding area are within Napa County and a mix of private land, Reclamation land and District land. Napa County has zoned the private land within the area planned development and residential county. Reclamation has designated the lands near the Project Area for recreational development and services. There are no habitat conservation plans or natural community conservation plans applicable to Project Area or adjacent parcels.

Berryessa Highlands is a large residential subdivision dating from the 1970s. It was expected that a total of approximately 2400 residential homes were going to be

developed at Berryessa Highlands however that growth has not occurred, and of the 562 parcels sold only 343 have been developed. The Regional Board has issued CDOs resulting in a restriction on any additional hookups to the District's wastewater system until necessary system improvements have been completed, restricting the planned development of Berryessa Highlands and development of the Steele Park/Lupine Shores concession area.

### **3.4.2 Environmental Consequences**

#### ***3.4.2.1 No Action Alternative***

Under the No Action Alternative there would be no changes to the affected environment. No improvements would be made to the WTP, the WWTP or wastewater storage. The District would be unable to comply with the NOV's, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment Under the No Action Alternative the CDO would remain in effect and would continue to restrict development within the Berryessa Highlands subdivision and the Steele Park/Lupine Shores concession area.

#### ***3.4.2.2 Proposed Action***

The Proposed Action complies with applicable sections of the Napa County Code, and is consistent with the 2008 Napa County General Plan. The Proposed Action is consistent with all applicable land use plans, policies, or regulations. The Proposed Action performs the necessary improvements to the WTP and WWTP to comply the NOV's, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment. These improvements may also allow for residential development within the Berryessa Highlands subdivision and at the Steele Park/Lupine Shores resort area. Berryessa Highlands is zoned for residential development. Therefore, the Proposed Action has a positive impact on land use, planning and zoning impacts.

### **3.4.3 Cumulative Effects**

The Proposed Action may allow for development of the Steele Park/Lupine Shores concession area. Any development within the Steele Park/Lupine Shores resort area will be covered by additional analysis through a separate NEPA process. Therefore, the Proposed Action is not expected to contribute any substantial cumulative land use, planning and zoning impacts.

## 3.5 Noise

### 3.5.1 Affected Environment

Lake Berryessa is in a remote rural setting with relatively low existing noise levels, with the exception of higher-use commercial areas along the western shore (concession areas), which provide only minimal services to the public at this time. Under previous operations, the most intense noise would occur at the resorts on the western shore during summer daylight hours (9:00 a.m. to 4:00 p.m.) due to the concentrated operation of motorized watercraft (i.e., motorboats and personalized watercraft) in and around the marinas.

Napa County monitored noise levels in select locations throughout the county during 2004, including two locations near Lake Berryessa, on Berryessa-Knoxville Road at the ‘Welcome to Lake Berryessa’ sign and at the Steele Park Resort (Boat Launch Ramp) (Table 2). The maximum noise level during the monitoring period was 60.9 at Berryessa-Knoxville Road and 62.1 at Steele Park Resort (Napa County 2005). These noise levels are typical of a commercial area or vehicle traffic corridor. Most of the sound measurements were less than 35.8 at Berryessa-Knoxville Road and less than 47.7 at Steele Park Resort. These low noise levels are comparable to a quiet residential neighborhood at night. Traffic noise was the dominant source of noise.

**Table 2. Summary of Short-Term Noise Monitoring Results**

Location	Date	Duration (minutes)	Duration							
			L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L <sub>peak</sub>	L <sub>10</sub>	L <sub>33</sub>	L <sub>50</sub>	L <sub>90</sub>
Berryessa-Knoxville Road at “Welcome to Lake Berryessa” sign	12/3/04	20	37.8 <sup>1</sup> 32.9 <sup>2</sup>	60.9	29.2	92.8	35.8	31.1	30.4	29.5
Steele Park Resort (Boat Launch Ramp)	12/10/04	20	45.9	62.1	32.5	87.3	47.7	40.7	38.8	36.0

Source: Napa County 2005

Notes: <sup>1</sup> Denotes measured L<sub>eq</sub> from entire noise monitoring episode

<sup>2</sup> Denotes calculated L<sub>eq</sub> with single event noise sources (i.e. automobile drive-by) removed

Abbreviations: L<sub>eq</sub>=equivalent sound level; L<sub>max</sub>=maximum sound level; L<sub>min</sub>=minimum sound level; L<sub>x</sub>=percentile-exceeded sound level

### 3.5.2 Environmental Consequences

#### 3.5.2.1 No Action Alternative

No construction activities would occur under the No Action Alternative, thus no construction-related noise would be generated.

#### 3.5.2.2 Proposed Action

Noise impacts associated with the Proposed Action would be short-term and a result of construction-related vehicles and activities. Napa County Code of Ordinances for Noise Limits for Construction Activities is 75 dBA for residential areas between the hours of 7:00 a.m. and 7:00 p.m. All construction equipment anticipated to be used on site is estimated to have a noise level of less than 90dBA at 50 feet (Department of Transportation 2011). Table 3 lists how dBA decreases as distance from a 90 dBA at 50 feet noise source increases, indicating that at 180 feet from the noise source the noise level is 75 dBA. Because of the currently quiet noise setting, construction noise may be noticeable to recreationists on the lake.

**Table 3: Estimated Distance to dBA Contours from Construction Activities**

Calculated noise level (dBA)	Distance from construction source (feet)
90	50
75	180
70	300
65	450
60	700
55	1100
50	1700

Source: Napa County Baseline Date Report, Noise Section Table 6-13, Version 1, November 2005

Based on the proximity to receptors, portions of the Proposed Action exceed the threshold for significance for noise impacts (Table 4.)

**Table 4: Distance to Receptors**

Project Portion	Nearest Receptor (feet)	Estimated dBA at Receptor
WTP	Residence (100)	>75
Backwash Main	Residence (100)	>75
WWTP	Resort Area (adjacent)	>90
	Residence (200)	<75
Pond Expansion	Resort Area (500) Home	>65
	(1200)	>55

Although the Proposed Action exceeds the threshold for significance for portions of the project, the following BMPs will be implemented to mitigate for the noise impacts of the Proposed Action:

- Limit activities exceeding the noise threshold to weekdays only between 7 a.m. and 5 p.m.
- All equipment should have sound-control devices no less effective than those provided on the original equipment. Motorized equipment should be adequately muffled and maintained.
- Enclose the noise source if feasible.
- Notify nearby residents, Reclamation and any concessionaire operating at Steele Park/Lupine Shores concession area in advance when activities exceeding the noise threshold will occur at least two weeks in advance.
- Whenever feasible, schedule different noise generating activities to occur at the same time, since additional sources of noise generally do not add a significant amount of noise.
- To the extent feasible, route heavy-truck away from residences and other sensitive receptors.

In addition to these BMPs, construction noise shall be minimized to the greatest extent practical and allowable under State and local safety laws. Construction equipment muffling and hours of operation shall be in compliance with Napa County Code Chapter 8.16. Equipment shall be shut down when not in use. Construction equipment shall normally be staged, loaded, and unloaded on the project site. If project terrain or access road conditions require construction equipment to be staged, loaded, or unloaded off the project site (such as on a neighboring road or at the base of a hill), such activities shall only occur during weekdays between the hours of 8 a.m. to 5 p.m. Exterior mechanical equipment shall be enclosed or muffled and maintained so as not to create a noise disturbance in accordance with the Napa County Code.

Potential impacts resulting from temporary and intermittent increase in noise levels may cause nest abandonment and death of young or loss of reproductive potential at active nests located near project activities. Napa County policies limit grading and vegetation removal to non-winter months (April 1 through October 15). In the event that earthmoving and/or grading activities that may be conducted during the identified breeding seasons of special status bird species associated with implementation of project should implement the mitigation measures to ensure that species located within the vicinity of the proposed project development are not adversely impacted during the breeding seasons, the following measure will reduce the potential impacts of noise to biological resources to a less than significant level.

Construction activities associated with the Proposed Action could generate noise levels above existing conditions. However, increases in noise levels would be temporary and are considered typical for construction activities. Implementation of measures contained within the County Noise Ordinance for construction related noise, such as muffling equipment, and restrictions on the hours of construction activities would minimize the temporary increases in noise; thus, there would be a less than significant impact resulting from noise generated by the Proposed Action.

### **3.5.3 Cumulative Effects**

The Proposed Action may allow for additional residential development within the Berryessa Highlands subdivision and at the Steele Park/Lupine Shores concession area. Napa County oversees the development of private land in the area serviced by the District. Napa County has zoned the area for residential development and has completed a General Plan which recognizes the development of the Berryessa Highlands subdivision. Any development within the Steele Park/Lupine Shores concession area will be covered by additional NEPA analysis. Therefore, the Proposed Action is not expected to contribute any substantial cumulative noise impacts.

## **3.6 Public Health and Safety**

### **3.6.1 Affected Environment**

The greater San Francisco Bay region is an area of high seismic activity. The Project Area could experience potentially strong ground shaking and other seismic related hazards based on the number of active faults in the San Francisco Bay region. According to Napa County records, the Project Area is not in an area subject to high liquefaction or landslide potential, however, Bauer and Associates found that the Pond Expansion portion of the Project Area is subject to periodic debris flow landslides.

The existing wastewater ponds pose a health and safety concern due to the treated wastewater overflow that occurs regularly during periods of heavy precipitation. The treated wastewater overflow eventually discharges to Lake Berryessa, which is a popular recreation destination for boating and swimming, potentially exposing visitors to pathogens.

## **3.6.2 Environmental Consequences**

### ***3.6.2.1 No Action Alternative***

Under the No Action Alternative, no improvements would be made to the WTP, the WWTP or wastewater storage. The District would be unable to comply with the NOVs, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment. Failure to comply with the Regional Board and the CDPH may negatively impact public health and safety. Under the No Action Alternative future discharges of wastewater could occur due to insufficient wastewater storage, which would continue to negatively impact public health and safety.

### ***3.6.2.2 Proposed Action***

The Proposed Action would help to prevent future discharges of treated wastewater. The proposed upgrades to the WTP are to meet the CDPH guidelines for surface water treatment. All wastewater ponds will be fenced. Therefore, the improvements to the WTP, WWTP and wastewater storage are a positive impact to public health and safety.

Prior to beginning the Proposed Action the District would develop a Worker Health and Safety Plan. With the development and implementation of a Worker Health and Safety Plan, health risks to construction workers will be less than significant.

## **3.6.3 Cumulative Effects**

The hillsides adjacent to the Pond Expansion area are subject to debris flow landslides during rain events. In the event of heavy precipitation and a seismic event, the Proposed Action for the Pond Expansion could cause localized flooding if the retaining walls and levee system failed. In the event of retaining wall and levee system failure, debris and treated wastewater could impede travel on Steele Canyon Road and the entrance to Steele Park/Lupine Shores concession area. There are no structures located downstream of the Pond Expansion. Steele Canyon Road would likely convey water, wastewater and debris from the ponds to Lake Berryessa in the event of such a failure, posing a temporary impact to public health and safety. This failure is unlikely and not a significant change due to the current geologic conditions onsite, therefore is not a significant impact to public health and safety.

## **3.7 Public Services and Utilities**

### **3.7.1 Affected Environment**

The District was created by Napa County in 1965 to provide municipal services to Berryessa Highlands and the Steel Park Resort. It was expected that a total of approximately 2400 residential homes were going to be developed at Berryessa Highlands however that growth never occurred, and of the 562 parcels sold only 343 have been developed. The lack of additional development has resulted in high wastewater treatment costs for Berryessa Highland residents. Prior to 2007, Steel Park Resort contributed to a third of The District's wastewater and water demand. Water and wastewater services were provided to the Steel Park concessionaire as part of the land use agreement that the District has for use of Reclamation land.

The Regional Board has issued numerous Notices of Violation and three CDOs in 1996, 2006 and 2010 in response to the discharges of wastewater into Lake Berryessa. The last two CDOs restricted any additional hookups to the NBRID wastewater system until necessary system improvements have been completed, resulting in a moratorium on development in the Berryessa Highlands. Because all connections from Steele Park were removed in 2009, the 2010 CDO restricts any new development at this resort location as well.

The District was fined \$330,000 by the Regional Board in 2011 for wastewater discharges that resulted in 2010 and 2011 from the current inadequate facilities. As part of the settlement with the Regional Board the District agreed to an accelerated schedule for completion of the wastewater system improvements which are part of the Proposed Action. To comply with the settlement with the Regional Board the District must complete the improvements by November 30, 2013.

### **3.7.2 Environmental Consequences**

#### ***3.7.2.1 No Action Alternative***

Under the No Action Alternative, no improvements would be made to the WTP, the WWTP or wastewater storage. The District would be unable to comply with the NOVs, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment. Failure to comply with the Regional Board and the CDPH would likely result in future negative actions against the District which could directly or indirectly hinder public services and utilities. Under the No Action Alternative future discharges of wastewater could occur due to insufficient wastewater storage, which could result in additional negative actions by the Regional Board.

### **3.7.2.2 Proposed Action**

The Proposed Action to make improvements to the wastewater system is the direct response to the NOV's and CDO's issued by the Regional Board. According to the District, the majority of the violations are due to a lack of storage and disposal capacity. As a result, discharges of wastewater to Lake Berryessa in violation to the facility WDR have occurred. The proposed upgrades to the WTP are to meet the CDPH guidelines for surface water treatment.

The expansion is in response to violations in discharge to Lake Berryessa, resulting in NOV's and CDO's. The Proposed Action not would generate the need for additional public services as the purpose of the Proposed Action is to meet an existing need for service. The Proposed Action would not increase the risk of fire, increase the demand for fire or police protection, would not support any residential demand that would place additional burdens on the local schools and parks, and would not require any new or expanded governmental services or facilities.

### **3.7.3 Cumulative Effects**

The Proposed Action may allow for additional residential development within the Berryessa Highlands subdivision and at the Steele Park/Lupine Shores concession area. Napa County oversees the development of private land in the area serviced by the District. Napa County has zoned the area for residential development and has completed a General Plan which recognizes the development of the Berryessa Highlands subdivision. Any development within the Steele Park/Lupine Shores concession area will be covered by a separate NEPA analysis. Therefore, the Proposed Action is not expected to contribute any substantial cumulative public services and utilities impacts.

## **3.8 Recreation Resources**

### **3.8.1 Affected Environment**

Lake Berryessa is a popular recreation area, receiving more than one million visitors each year. It is the largest reservoir in the eastern foothills of the North Coast Range, and, with the exception of the Sacramento-San Joaquin Delta, it is the only large freshwater resource available to San Francisco Bay Area residents. The lake attracts visitors for a variety of recreation opportunities, such as boating, water skiing, picnicking, camping, hiking, swimming, and fishing. Most of the recreation activities are water-dependent; therefore, visitor use is higher in the summer. An estimated 75 percent of total visitation occurs between Memorial Day and Labor Day weekends (U.S. Bureau of Reclamation 2006).

Steele Park Concession area was developed in 1959 to provide recreational opportunities at Lake Berryessa. The District was created by Napa County in 1965 to provide municipal services to Berryessa Highlands and Steele Park concession area. In 2009 the concession contract at Steele Park expired and in 2010 a concession contract was awarded to a new concessionaire, Pensus Lake Berryessa Properties, LLC, who renamed the concession area Lupine Shores. The concession contract with Pensus Lake Berryessa Properties, LLC was terminated in 2012. Interim recreation services to include camping, day use and boat launching are planned for 2013 to provide access to Steele Park/Lupine Shores concession area until a new long-term concession contract can be awarded. Current recreation opportunities at the Steele Park/Lupine Shores concession area are day use and a boat launch. Additional recreation development by a private concessionaire was identified in the Lake Berryessa Visitor Services Plan (Reclamation 2006.)

Water and wastewater services were provided to the original Steele Park concessionaire as part of the land use agreement that the District has for use of Reclamation land. Prior to 2007, Steele Park Resort contributed approximately one third of the District's wastewater and water demand, however all the water and wastewater connections have been disconnected. Any new wastewater connections to the District are restricted by the CDOs from the Regional Board.

### **3.8.2 Environmental Consequences**

#### ***3.8.2.1 No Action Alternative***

Under the No Action Alternative, no improvements would be made to the WTP, the WWTP or wastewater storage. The District would be unable to comply with the NOV's, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment. Recreational development at the Steele Park/Lupine Shores concession area will be limited due to the lack of wastewater service.

#### ***3.8.2.2 Proposed Action***

The Project Area does not contain recreational facilities, nor does it propose the construction or expansion of recreational facilities. The Project Area is near and adjacent to the Steele Park/Lupine Shores concession area. A portion of the project, located at the WWTP, may need to be accessed from Steele Park/Lupine Shores concession area resulting in temporary additional traffic through the recreation area. All construction traffic within Steele Park/Lupine Shores concession area associated with the Proposed Action will occur between 8:00 am and 5:00 pm during weekdays, and will provide Reclamation and any concessionaire operating at Steele Park/Lupine Shores concession area prior notification at least two weeks in advance.

Based on the lack of direct impacts to recreational resources, the Proposed Action will have no significant impacts on recreation resources. Indirect impacts to recreation resources may result due to the proximity of the Proposed Action to the Steele Park/Lupine Shores concession area.

### **3.8.3 Cumulative Effects**

In the long term, the Proposed Action will allow for development of greater recreation services as described in the Visitor Services Plan (Reclamation 2006) and therefore will have a positive cumulative impact on recreation resources.

## **3.9 Soils, Minerals, and Geological Resources**

### **3.9.1 Affected Environment**

The Project Area is located within the Coast Range Geomorphic Province of California, where the topography and predominant geological structures trend in a northwest direction. The surrounding vicinity is underlain by marine mudstone, sandstone, siltstone, and conglomerate rocks of the Lower Cretaceous Great Valley Sequence and the Lower Cretaceous-Upper Jurassic Great Valley Sequence.

The improvement areas are located on the slopes bordering the south end of Lake Berryessa. The region is characterized by the northwest trending Wragg Ridge located to the east. The western flank of the ridge, extending down to Lake Berryessa, is characterized by a series of moderate steep slopes with intervening westerly flowing drainages. Slope inclination range from mild to steep slopes.

The greater San Francisco Bay region is an area of high seismic activity. The Project Area could experience potentially strong ground shaking and other seismic related hazards based on the number of active faults in the San Francisco Bay region. USGS maps (Graymer 2006) indicated that there is one fault underlying the Pond Expansion portion of the Project Area. According to the geotechnical investigation produced by Bauer Associates for this project, the nearest active faults are the Cordelia and Green Valley Fault Zones located approximately 10 and 11 miles, respectively, south of the Project Area. According to Napa County records, the project area is not in an area subject to high liquefaction or landslide potential, however, Bauer and Associates found that the Pond Expansion portion of the Project Area is subject to periodic debris flow landslides.

## **3.9.2 Environmental Consequences**

### **3.9.2.1 No Action Alternative**

Under the No Action Alternative, no improvements would be made to the WTP, the WWTP or wastewater storage. There would be no change in the potential for seismic activity or soil liquefaction. Periodic debris flow landslides would continue to occur.

### **3.9.2.2 Proposed Action**

Areas to be graded will be cleared of designated brush, rubble, debris and old fills. Wells, cesspools, and other voids encountered or generated during clearing will be either backfilled with granular material or compacted soil, or capped with concrete as determined by the geotechnical engineer and in accordance with Napa County requirements. Areas to be graded will be stripped of the upper soils containing root growth and organic matter. This material will be reused as topsoil, or mixed with at least two parts soil and may be used as fill in areas 10 feet beyond structures, walks and paved areas. The grading and conversion of grassland and oak woodland of the Proposed Action would result in minor alterations to the geologic setting.

Following clearing, stripping and planned excavations, weak, porous surface soils and variable density old fills will be excavated for their full depth within select fill areas. Various areas have been identified in which remedial earthwork will take place per the geotechnical recommendations. Onsite soils will be reused as general fill where deemed appropriate by the geotechnical engineer. Though the ponds were deemed to not be jurisdictional per Dam Safety, a public health and safety program, select areas of fill for Ponds 2 and 3 were designed by the civil engineer per the geotechnical engineer's recommendations to be consistent with the Dam Safety criteria.

Cut and fill slopes on the interior and exterior of Ponds 1-4 range from 1.5:1 to 2:1 with the majority designed at 2:1. Benches and terrace drainages have are incorporated on fill slopes in general accordance with code requirements and geotechnical recommendations. Fill slopes as steep as 1.5:1 will have a reinforced earth system to meet geotechnical engineer requirement. Graded slopes will be protected from erosion upon completion of grading by applying a native seed mix. Temporary cut slopes up to 1:1 may be used in accordance with field guidance from the geotechnical engineer. Subsurface drainage facilities will be installed where evidence of seepage is observed and as recommended by the geotechnical engineer. Subdrains will be constructed in areas of high groundwater to protect the synthetic

liner. Areas to receive fill will be prepared by cutting level keyways and benches extending into the firm bedrock. If isolated zones of extremely weak soils or bedrock are encountered during excavation they will be removed to expose firm soil or bedrock. The depth and extent of excavations and over-excavation will be approved in the field by the geotechnical engineer.

Pursuant to Section 18.108.070.L of the County Code earthmoving activities cannot be performed from October 15th to April 1st; therefore, they would take place during the dry season when rain storms are less likely, resulting in negligible erosion and sedimentation. Potential erosion and soil loss associated with the construction of the ponds would be controlled through the implementation of BMPs within the SQMP. Construction vehicles and equipment entering and exiting the project areas could cause some soil erosion and dust. The proper implementation of the SWPPP would reduce the impacts from erosion. In addition, vehicles and equipment would be maintained in designated areas to reduce the erosion potential. Therefore, potential impacts associated with soil erosion, soil loss, and sedimentation as a result of the construction activities related to proposed site improvements would be less than significant.

Based on a geotechnical review of the site, existing conditions allow for the possibility of debris flow due to landslides. This can occur when the ground is saturated due to rain events and seismic activity. Even without any improvements, debris flow event could take place in the affected areas. The design of the improvements incorporates elements to protect the integrity of the pond berms as debris flows cannot be prevented due to existing conditions.

Debris flow that may be experienced at Pond 1 may be addressed operationally by keeping the volume in the pond low most of the year including the wet season, installation of an earthen diversion berm, or a solids structure such as a concrete masonry unit wall. The District is currently evaluating the options, risks, and costs involved with all options. Any additional seismic mitigation may be covered under additional environmental analysis.

The channel to the north of Ponds 2 and 3 primary purpose is to route surface runoff around the pond structure. Its secondary purpose is to allow for routing of debris flows from landslides per the geotechnical recommendations. The berm varies in height from The District may install additional risk mitigation measures to protect the pond in addition to the earthen berm. The fencing would consist of a flexible ring-net barrier system per the geotechnical recommendations. Any additional seismic mitigation may be covered under additional environmental analysis.

Based on the BMPs to minimize soil erosion, soil loss and sedimentation, and the mitigation measures proposed to limit the risk of debris flow to existing levels, the

Proposed Action has a less than significant impact to soils, minerals and geological resources.

### **3.9.3 Cumulative Effects**

The hillsides adjacent to the Pond Expansion area are subject to debris flow landslides during rain events. In the event of heavy precipitation and a seismic event, the Proposed Action for the Pond Expansion could cause localized flooding if the retaining walls and levee system failed. In the event of retaining wall and levee system failure, debris and treated wastewater could impede travel on Steele Canyon Road and the entrance to Steele Park/Lupine Shores concession area. There are no structures located downstream of the Pond Expansion. Steele Canyon Road would likely convey water, wastewater and debris from the ponds to Lake Berryessa in the event of such a failure. This failure is unlikely and not a significant change due to the current geologic conditions onsite, therefore the Proposed Action is not expected to contribute any substantial cumulative soils, minerals and geological resources impacts due to temporary road blockages in the event of the retaining walls or levee system failing.

## **3.10 Socioeconomics, Population, and Housing**

### **3.10.1 Affected Environment**

Napa County's economy is based on agriculture and tourism, both of which are based on viticulture. The median household income for Napa County was \$79,600 in 2008, however, 30% of households within Napa County are considered low-income. Due to the affluent nature of Napa County, there is an unmet need for affordable housing (Napa County General Plan 2008).

Berryessa Highlands is a large residential subdivision dating from the 1970s. It was expected that a total of approximately 2400 residential homes were going to be developed at Berryessa Highlands however that growth has not occurred, and of the 562 parcels sold only 343 have been developed. The lack of additional development has resulted in high wastewater treatment costs for Berryessa Highland residents. The Regional Board has issued CDOs resulting in a restriction on any additional hookups to the District's wastewater system until necessary system improvements have been completed, restricting the planned development of Berryessa Highlands.

### **3.10.2 Environmental Consequences**

#### ***3.10.2.1 No Action Alternative***

Under the No Action Alternative, there would be no changes to the affected environment. No improvements would be made to the WTP, the WWTP or wastewater storage. The District would be unable to comply with the NOV's, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment. Under the No Action Alternative the CDO would remain in effect and would continue to restrict development within the Berryessa Highlands subdivision and the Steele Park/Lupine Shores concession area. Future discharges of wastewater could occur due to insufficient wastewater storage, which could result in additional negative actions by the Regional Board further increasing the cost of wastewater treatment.

#### ***3.10.2.2 Proposed Action***

It is assumed that the employees needed for the Proposed Action will be hired from the neighboring communities of Napa, Fairfield and Winters. There will be no change in the number of employees required to operate and maintain the existing facility and the proposed expansions. No new homes or business, roads or infrastructure are proposed that would induce growth. The project does not displace any housing or people.

The Proposed Action would perform the necessary improvements to the WTP and WWTP to comply the NOV's, CDOs and settlement with the Regional Board as well as the CDPH guidelines for surface water treatment. These improvements may also allow for residential development within the Berryessa Highlands subdivision and at the Steele Park/Lupine Shores concession area. Berryessa Highlands is zoned for residential development but further development has not been able to occur due to the CDOs from the Regional Board. Therefore, the Proposed Action has a positive impact on socioeconomics, population and housing.

### **3.10.3 Cumulative Effects**

The Proposed Action may allow for development of the Steele Park/Lupine Shores concession area. Any development within the concession area will be covered under a separate NEPA process. Therefore, the Proposed Action is not expected to contribute any substantial cumulative socioeconomics, population and housing impacts.

## 3.11 Transportation and Circulation

### 3.11.1 Affected Environment

Regional access to Lake Berryessa is provided by State Route (SR) 121 and SR 128, which feed to local county roads (Berryessa-Knoxville Road, Pope Canyon Road, Steele Canyon Road, and Wragg Canyon Road). The local roads are paved with two lanes, designed for 25 to 55 miles per hour traffic. Primary access roads in the area operate below capacity except on weekends and holidays. Accident rates are comparable to those of other state roads on similar terrain.

The Steele Canyon Road provides the only access into the project areas. This road is a public two-lane, north-south county-maintained road, except for one mile of the road which is a private single-lane road accessed through a gate to the northern terminus of the road where the WTP is located. Steele Canyon Road provides access to the Berryessa Highlands residential area. Steele Canyon Road also provides access to the southern shore of Lake Berryessa through an existing resort location.

Traffic on Steele Canyon Road includes agricultural, commercial, residential, and recreation users, and daily traffic counts vary depending on the time of year and road segment. During March of 2008 traffic counts averaged daily traffic range of 472 – 578 (Table 5) According to 2002 traffic counts prepared for the County, the Level of Service from Rimrock Drive to State Route 128 operates at a level “A” during daily hours, and during peak hours. A level of service of D or better is the desired condition for county roads.

**Table 5. Average Daily Traffic Counts on Steele Canyon Road – March 2008**

Road Segment	Direction	Average Daily Traffic
East of State Highway 128	East	578
East of State Highway 128	West	571
Entrance to Berryessa Highlands Subdivision	East	533
Entrance to Berryessa Highlands Subdivision	West	472

Source: Napa County Department of Public Works 2009

### **3.11.2 Environmental Consequences**

#### ***3.11.2.1 No Action Alternative***

No construction activities would occur under the No Action Alternative, thus no construction-related traffic would occur.

#### ***3.11.2.2 Proposed Action***

Transportation and circulation impacts associated with the Proposed Action would be short-term and a result of employee vehicles and construction-related vehicles. The Proposed Action would utilize the existing Steele Canyon Road, which is currently the main access point to all portions of the Project Area. Construction traffic would involve construction workers commuting daily to the project areas from nearby communities and transportation of construction equipment and materials. It is assumed that the employees will be hired from the neighboring communities of Napa, Fairfield and Winters. The maximum number of employees associated with construction will be 26, which is estimated to result in an additional 2516 round trips over the duration of the project. Construction workers will park in designated areas within the Project Areas. No storage of vehicles or materials will occur on county roadways. Minimal transportation of equipment and materials is expected as all excavated material will be used onsite as fill and no additional fill will be required.

The Proposed Action would involve the temporary increase in traffic as a result of construction activities, however, traffic volumes associated with the Proposed Action are not anticipated to increase to a level that would diminish the Level of Service beyond existing levels within the area of the project site. Prior to the beginning of construction the District will complete a traffic plan and make it available to the public. Any traffic delays must be identified and residents notified at least two weeks in advance. Once construction is complete, there will be the same number of employees as are currently working for the District therefore no permanent impacts to transportation and circulation are associated with the Proposed Action. Therefore, any impacts to transportation and circulation would be temporary and less than significant.

#### **3.11.3 Cumulative Effects**

The Proposed Action may allow for additional residential development within the Berryessa Highlands subdivision and at the Steele Park/Lupine Shores concession area. Napa County oversees the development of private land in the area serviced by the District. Napa County has zoned the area for residential development and has completed a General Plan which recognizes the development of the Berryessa Highlands subdivision. Any development within the concession area will be covered under a separate NEPA process. Therefore, the Proposed Action is not expected to

contribute any substantial cumulative transportation and circulation impacts due to increased traffic.

The hillsides adjacent to the Pond Expansion area are subject to debris flow landslides during rain events. In the event of heavy precipitation and a seismic event, the Proposed Action for the Pond Expansion could cause localized flooding if the retaining walls and levee system failed. In the event of retaining wall and levee system failure, debris and treated wastewater could impede travel on Steele Canyon Road and the entrance to Steele Park/Lupine Shores concession area. There are no structures located downstream of the Pond Expansion. Steele Canyon Road would likely convey water, wastewater and debris from the ponds to Lake Berryessa in the event of such a failure, causing temporary impacts to transportation and circulation. This failure is unlikely and not a significant change due to the current geologic conditions onsite, therefore the Proposed Action is not expected to contribute any substantial cumulative transportation and circulation impacts due to temporary road blockages in the event of the retaining walls or levee system failing.

## **3.12 Visual Resources**

### **3.12.1 Affected Environment**

Lake Berryessa is a significant scenic and visual resource for visitors, travelers, and residents in the region. The lake is one of the largest freshwater lakes in California and affords visitors with a variety of high quality scenic vistas and panoramas of the lake and surrounding mountains. The majority of publicly accessible views are from watercraft, local roadways, recreation areas, and the developed areas at the concession areas. The length and configuration of Lake Berryessa's shoreline, the surrounding topography, and habitat provide substantial variety in both viewpoint orientation and available views to create a variety of observing conditions and opportunities from around the lake.

The Project Area is located off Steele Canyon Road within and adjacent to the Berryessa Highlands subdivision and Reclamation land. Views from the Project Area are open space consisting primarily of rolling hills, grassland, and oak woodland. Development in the vicinity is low-density residential. Steele Park/Lupine Shores concession area is also located in the vicinity of the Project Area, and provides recreation services such as camping and a boat launch.

The existing WTP consists of a small wooden building and associated concrete water treatment structure, earthen berm backwash holding pond, and out-buildings. The land surrounding the building and ponds is gravel and is accessed via a dirt road. The WTP is visible from residences and Lake Berryessa.

The current Backwash Force Main is located on the ground surface running approximately 3970 feet. The Backwash Force Main runs through primarily oak woodland, and is visible from several homes located on Cape Cod Court.

The WWTP is comprised of multiple buildings and structures, and three wastewater ponds. The land surrounding the facilities is paved and compacted dirt. The WWTP is accessed via a paved road. The WWTP is visible from one residence, the Steele Park/Lupine Shores concession area, and limited portions of Steele Canyon Road.

The Pond Expansion area is undeveloped except for a dirt road used to access the parcels and the existing tailwater pond. The Pond Expansion area is visible from residents located to the east of the site, the Steele Park/Lupine Shores concession area, and Steele Canyon Road.

### **3.12.2 Environmental Consequences**

#### ***3.12.2.1 No Action Alternative***

There would be no changes to the affected environment. The existing WTP and WWTP would continue to be utilized. The portion of the Project Area proposed to be utilized for the Pond Expansion would remain undeveloped except for the existing tailwater pond and a dirt road which was built under an existing easement.

#### ***3.12.2.2 Proposed Action***

The Proposed Action would utilize the same footprint as the existing WTP, and would add a packaged treatment plant and a pre-manufactured metal building. The Proposed Action would bury the existing Backwash Force Main in the current alignment. The Proposed Action would utilize the same footprint as the existing WWTP, would remove one wastewater pond, and add a packaged treatment plant and one concrete structure. These portions of the Proposed Action would not alter the current use of the land.

The Pond Expansion portion of the Proposed Action would convert approximately 10 acres of undeveloped oak woodland, removing approximately 150 oak trees as well as other vegetation. The new wastewater ponds would be 3.8 acres, which would be visible from higher elevations to the east. Ponds 2 and 3 will be located in a low area between hills and adjacent to Steele Canyon Road. Ponds 2 and 3 will be created by excavating by constructing berms surrounding the ponds. The berms will be 20 to 100 feet high with grades of 50% to 70%, with the toe of the highest berm less than 100 feet from Steele Canyon Road. Ponds 2 and 3 will not be visible from Steele Canyon Road due to the height of the berms. The proposed action will necessitate the rerouting of an ephemeral stream located on Reclamation land. Pond 4 will be located on a hill adjacent to Steele Canyon Road, with an irregular shape to

contour to the existing grade. The pond will be surrounded by cut slopes and fill slopes (earthen berms) which will be less than 25 feet higher than the existing grade. Pond 4 will not be visible from Steele Canyon Road due to the existing topography and the height of the berms. The berms surrounding Ponds 2, 3 and 4 will be visible from Steele Canyon Road and the Steele Park/Lupine Shores concession area. In addition to the construction of Ponds 2, 3 and 4, a new pump house would be constructed to service the wastewater ponds and sprayfields. The new pump house would require grading and the construction of an access road. The pump house would be visible from Steele Canyon Road and the Steele Park/Lupine Shores concession area. All berms and cut and fill slopes will be planted with a native seed mix.

Prior to beginning the Proposed Action an Oak Mitigation Plan shall be developed by a qualified biologist submitted for approval to Reclamation. All oak trees removed from Reclamation land will be replaced on Reclamation land at a ratio of 2:1. The District shall retain a qualified biologist or ecologist to develop an enhancement plan. At a minimum the enhancement plan shall include planting guidelines, planting survival rate of 80% or greater over a three to five year period, and monitoring and reporting program to be submitted to Reclamation annually. Once the enhancement plan has been approved by Reclamation, implementation shall be initiated within the 1 year of completion of the Proposed Action.

Approximately 730 linear feet of the drainage will be modified routing the drainage around the wastewater pond expansion, altering the drainage pattern and removing vegetation. Modification of streams or waterways is regulated under several federal and state statutes, including section 404 of the federal Clean Water Act and Section 1600 under DFW code. Section 404 of the Clean Water Act authorizes the Secretary of the Army, acting through the USCOE, to issue permits regulating the filling or modification of streams or waterways including those defined as Waters of the United States. All appropriate permits will be obtained from DFW and USCOE by the District prior to beginning the project. All necessary mitigation plans required by DFW and USCOE will be completed and provided to Reclamation for approval prior to beginning the Proposed Action. The District will implement mitigation measures BIO-3 and BIO-4 to offset any losses to riparian habitat.

The Proposed Action would not result in a new source of substantial light or glare which would adversely affect day or nighttime views in the area. There is no substantial change in use of the WTP, WWTP or Backwash Force Main associated with the Proposed Action, therefore there is no substantial visual impact associated with these actions. The Pond Expansion portion of the Proposed Action will construct 3.8 acres of wastewater ponds and increase the topography between 20 and 100 feet above the existing grade. The Proposed Action will result in the conversion of approximately 10 acres of oak woodland and removal of approximately 150 trees and rerouting of 730 linear feet of riparian habitat, which will be mitigated for as

described in this section and in section 3: Biological Resources. Based on the mitigation measures described in this section there will be no permanent impacts to visual resources. Temporary impacts to visual resources from construction activities including storage of materials and vehicles will be removed after project completion.

### **3.12.3 Cumulative Effects**

The Proposed Action may allow for additional residential development within the Berryessa Highlands subdivision and at the Steele Park/Lupine Shores concession area. Napa County oversees the development of private land in the area serviced by the District. Napa County has zoned the area for residential development and has completed a General Plan which recognizes the development of the Berryessa Highlands subdivision. Any development within the Steele Park/Lupine Shores concession area will be covered under a separate NEPA process. Therefore, the Proposed Action is not expected to contribute any substantial cumulative visual impacts.

## Chapter 4 - References

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United States Bureau of Reclamation. 2005. Lake Berryessa Visitor Services Plan. Online:  
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## **Chapter 5 - Consultation and Coordination**

This section presents the agencies and parties that were consulted during development of the document, the applicable Federal, State, and local requirements the project will comply with, and the distribution list.

### **5.1 Consultation and Coordination**

Several agencies and parties were consulted during the development of this document, including:

- Napa County
- USCOE
- Summit Engineering, Inc.
- Western Water

Napa County completed a Mitigated Negative Declaration under the California Environmental Quality Act for the Pond Expansion portion of the Proposed Action on November 13, 2012, which is included as Appendix A. Reclamation provided comments to Napa County on this document. Napa County completed Notices of Exemption for the WTP Upgrade, Backwash Force Main, and WWTP Upgrade portions of the Proposed Action.

For supplemental information, a Biological Resources was completed by Kjeldsen Biological Consulting on the Pond Expansion portion of the Project Area, and is provided in Appendix B. A Cultural Resources Report was completed by Tom Origer & Associates for the entire Project Area, and is provided as Appendix C.

### **5.2 Federal, State, and Local Requirements**

The Proposed Action analyzed in this EA must fulfill or comply with the Federal, State, regional, and local environmental requirements described in Table 6. Reclamation's action is to approve the Proposed Action as the land owner. As the project proponent the District is responsible for obtain all relevant permits prior to beginning to the Proposed Action.

**Table 6: Federal, State, and Local Requirements**

<i>Statute</i>	<i>Relevant Permits/ Processes</i>
<b>FEDERAL</b>	
National Environmental Policy Act of 1969 (NEPA)	EA, FONSI
National Historic Preservation Act of 1966 (NHPA)	Addressed in EA (SHPO Consultation)
Executive Order 12898, Environmental Justice	Analyzed in EA
Clean Air Act (Section 176)	Conformity provisions
Clean Water Act (CWA)	NPDES permit (SWPPP)
Indian Trust Assets (ITA)	Analyzed in EA
Endangered Species Act (ESA)	Analyzed in EA
<b>STATE</b>	
Porter-Cologne Water Quality Control Act	NPDES permit (SWPPP)
Government Code Section 65040.12(e) Environmental Justice	Addressed in EA/IS
Fish and Game Code Section 1602	Lake and Streambed Alteration Permit
California Clean Air Act (CCAA)	Ambient air quality standards
<b>LOCAL</b>	
Napa County General Plan	LOS thresholds
Bay Area Air Quality Management District (BAAQMD)	Air Quality thresholds