

Section 6: Recycled Water Quality Regulation

6.1 Introduction

In order to comply with the EPA's Water Quality Criteria and Standards Plan (EPA Plan), the Recycled Water Master Plan strategies include improving and expanding the transport, storage, and use of recycled water, as well as improving the ability to transport fresh water to Indian Creek Reservoir. Appendix A (Technical Memorandum 1 – Environmental Regulations and Permitting) contains detailed information on the EPA plan and comprehensive regulatory and permitting information.

The following agencies have jurisdiction over the use of recycled water in the States of California and Nevada:

The Alpine County Board of County Commissioners has the authority to review all actions for conformance with local laws, ordinances, and zoning regulations.

The Lahontan Regional Water Quality Control Board has regulatory authority to enforce the requirements of the Clean Water Act and the California Water Code. This includes the regulatory authority to enforce the implementation of TMDLs and the adoption of waste discharge requirements to ensure compliance with water quality standards. The Board has authority to implement the requirements of Title 22 of the California Code of Regulations governing the use of recycled water in California.

The Nevada Division of Water Resources (NDWR) has the authority to permit the use of any water within the State including the use of wastewater recycled water. Any person who desires to appropriate public water in the State needs, prior to performing any work, to make application to the State Engineer to change the place of diversion or change in manner or place of use. NDWR also administers permits for the conservation of water resources and for the quantities and manner of use of the various water resources, including the use of recycled water. The role of the NDWR in regulating the reuse of recycled water is to set maximum quantities of recycled water which may be used for specific purposes as part of the State's water conservation efforts.

The Nevada Division of Environmental Protection (NDEP) administers programs designed to protect and enhance the environment of the State including public health and enjoyment, the propagation and protection of terrestrial and aquatic life, the operation of existing industries, the operation of public water and wastewater systems, agricultural, recreational and other activities. The NDEP issues permits that limit the amount of pollutants that can be discharged to the waters of the State. In addition, NDEP assesses, monitors, and issues permits for the discharge and reuse of recycled water from wastewater treatment facilities.

Federal agencies with review and/or permitting authority for portions of the Master Plan that encroach on or impact Federal lands are:

The U.S. Bureau of Land Management (BLM) manages some of the land where conveyance ditch improvements would occur. The BLM is responsible for reviewing any proposed construction activity that may involve lands under their jurisdiction.

The U.S. Forest Service (USFS) manages the remaining Federal lands within the Master Plan area that are not under the control of the BLM. They are responsible for reviewing any proposed construction or planning activity for conformity with the Forest Plan.

There are recent changes in key Federal regulatory programs that have to be considered with any of the elements of the Master Plan.

In July 2000 the United States Environmental Protection Agency issued a final rule revising the current regulatory requirements for establishing TMDLs under the Clean Water Act. The final rule implements an enhanced approach to water quality planning, assessing and permitting TMDLs, and regulatory requirements. The new rules applied to the Lahontan Regional Water Quality Control Board's final TMDL for Indian Creek Reservoir and Indian Creek established in 2002, as outlined in Table 1.1 (Page 1-4). Any water reuse programs need to be evaluated under the new rule to ensure the ability to meet the regulatory requirements.

6.2 California Regulation

California requirements for production, discharge, distribution, and use of reclaimed (recycled) water are contained in the California Water Code, Division 7 – Water Quality, Sections 1300 through 14076 (Water Code); the California Administrative Code, Title 22 – Social Security, Division 4 – Environmental Health, Chapter 3 – Reclamation Criteria, Sections 60301 through 60475 (Title 22); and the California Administrative Code, Title 17 – Public Health, Chapter 5, Subchapter 1, Group 4 – Drinking Water Supplies, Sections 7583 through 7630 (Title 17). In addition, guidelines for production, distribution, and use of recycled water have been prepared or endorsed by State agencies administering the reclaimed (recycled) water regulations.

In an effort to consistently apply state statutes and regulations regarding water recycling and quality, The State Water Resources Control Board has developed a draft Recycled Water Policy to provide direction to the Regional Water Boards to ensure consistent interpretations of state regulations with respect to water recycling projects. The proposed Recycled Water Policy addresses requirements for implementation plans for recycled water irrigation projects, reduction of salts, groundwater recharge reuse projects, liability, and procedures for conflict resolution. The policy does not address recycled water impoundments, tailwater, or aquifer storage and recovery projects that do not use recycled water.

6.2.1 Water Code

The Water Code contains requirements for the production, discharge, and use of reclaimed, or recycled, water. The Porter-Cologne Water Quality Control Act is contained in Division 7 of the Water Code. It established the State Water Resources Control Board (SWRCB) as the State agency with primary responsibility for the coordination and control of water quality, water pollution, and water rights (Division 7, Chapter 1).

Nine Regional Water Quality Control Boards (RWQCB) were established to represent the SWRCB regionally and carry out the enforcement of water quality and pollution control measures (Division 7, Chapter 4). Also, each RWQCB was required to formulate and adopt water quality control plans and establish requirements for waste discharge to waters of the State.

Water reclamation (Division 7, Chapter 7) was included in the Porter-Cologne Water Quality Control Act in 1969. Subsequent amendments required the California Department of Health Services (DHS) to establish water reclamation criteria, and gave the RWQCB the responsibility

of prescribing specific water reclamation requirements for water which is used or proposed to be used as recycled water. It also provided for the regulation of injection of waste into the ground, and required the use of recycled water, if available, rather than potable water for irrigation of greenbelt areas.

In 1980, focus on the ownership of treated wastewater was addressed in the Water Code. Amendments required that the owner of a wastewater treatment plant obtain approval from the SWRCB prior to making any changes in the point of discharge, place of use, or purpose of use of treated wastewater.

6.2.2 Title 22

In 1975, Title 22 was prepared by the California Department of Health Services (DHS) in accordance with the requirements of Division 7, Chapter 7 of the Water Code. In 1978, Title 22 was revised to conform with the 1977 amendment to the Federal Clean Water Act. The requirements of Title 22, as revised in 1978 and again in 1990, regulate production and use of recycled water in California today.

Title 22 established four categories of wastewater treatment effluent (recycled water):

Un-disinfected Secondary Water – oxidized wastewater

Disinfected Secondary 23 – Water that has been oxidized and disinfected so that the median concentration of total coliform bacteria does not exceed a Most Probable Number (MPN) of 23 per 100 milliliters (ml) and the single day maximum does not exceed a MPN of 240 per 100 ml in any 30 day period.

Disinfected Secondary 2.2 – same as secondary 23 except the median MPN must be below 2.2 and the single day maximum below 23.

Disinfected Tertiary Water – Filtered and disinfected wastewater that has either been disinfected with a $C \times t$ [disinfection concentration (mg/l) multiplied by contact time (minutes)] value of at least 450 and a minimum contact time of 90 minutes or removal of 99.999 percent (5-log) of f-specific bacteriophage MS2, or polio, and median concentration of total coliform MPN of 2.2 or less and a maximum single day total coliform MPN less than 23.

The District's wastewater treatment plant is currently permitted as secondary 23 recycled water. The plant, however, has consistently met the secondary 2.2 criteria for the past several years.

Title 22 requires the following control measures when irrigating with Secondary 23 recycled water:

- **Cross Connection Control** – No physical connection may exist between pipes carrying recycled water and the potable water system. Where recycled water is piped to the reuse area a cross connection control plan is necessary to ensure the safety of the potable water system. No hose bibs may be used on pipes carrying recycled water except the quick-connect type to prevent contamination of normal garden hoses.
- **Domestic Well Setback** – No storage of, or irrigation with, disinfected secondary 23 recycled water shall occur within 100 ft of a domestic well. Repermitting to secondary 2.2 water does not change the setback requirement.

- Residence Setback – No spray irrigation is allowed within 100 ft of a residence or place where public exposure could be similar to that of a park or playground for secondary 23 and secondary 2.2 water.
- Runoff – Irrigation runoff shall be confined to the recycled water use area unless otherwise authorized by the regulatory agency.
- Drinking Water – Drinking water fountains must be protected against contact with recycled water spray, mist or runoff.

6.2.3 Title 17

Title 17 regulates one aspect of the distribution of recycled water. The focus of Title 17 is protection of drinking water supplies through control of cross-connections with potential contaminants. Examples of potential contaminants to potable water supplies are sewage; non-potable water supplies such as recycled water, irrigation water, and auxiliary water supplies; fire protection systems; and hazardous substances.

Table 1 of Title 17, Group 4, Article 2 – Protection of Water System, specifies the minimum backflow protection required on the potable water system for situations in which there is potential for contamination to the potable water supply. Recycled water is addressed as follows:

- An air-gap separation is required on “Premises where the public water system is used to supplement the reclaimed water supply.”
- An air-gap separation is required on “Premises where reclaimed water is used and there is no interconnection with the potable water system. A reduced pressure principle backflow prevention device may be provided in lieu of an [air gap] if approved by the health agency and water supplier.”

An air-gap separation is defined as “a physical break between the supply line and a receiving vessel.” A reduced pressure principle backflow prevention device is defined as “ a backflow preventer incorporating not less than two check valves, an automatically operated differential relief valve located between the two check valves, a tightly closing shut-off valve on each side of the check valve assembly, and equipped with necessary test cocks for testing.”

6.3 Nevada Regulation

Due to the proximity of the recycled water use area in Alpine County to the California-Nevada state line, the potential exists for the District to transport water into Nevada for crop or pasture irrigation. Nevada’s laws concerning recycled water use are substantially similar in intent to California’s, but are more rigid in their structure and end-user requirements.

6.3.1 Nevada Division of Environmental Protection

The Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control, governs recycled water reuse in Nevada. The Nevada Revised Statutes, Chapter 445A, contains requirements for the use of reclaimed, or recycled, water. Chapter 445A.275 cites:

“A person using treated effluent for irrigation by flooding or sprinklers shall use effluent that has received at least secondary treatment. As used in this subsection:

'Secondary treatment' means the biological oxidation of the sewage to a point where the sewage has a 5-day inhibited biochemical oxygen demand concentration of 30 mg/l or less.

'Five-day inhibited biochemical oxygen demand' means the amount of dissolved oxygen in mg/l required during stabilization of the carbonaceous decomposable organic matter by aerobic bacterial action at 20 degrees centigrade for 5 days."

The level of total coliform in the recycled water determines the purposes for which it can be used as well as the buffer zone around the use area. Also, the total amount of nitrogen and the amount of each species (ammonia, nitrate, organic) are considered when determining the suitability of recycled water for a given purpose.

The required coliform levels and buffer zones for the four classifications are shown in Table 6.1. In addition to compliance with these regulations, NDEP requires an Effluent Management Plan be submitted by the recycled water user and approved prior to the use of recycled water.

Table 6.1: NDEP Recycled Water Quality Standards

Reuse Classification	Fecal Coliform (colony-forming units per 100 mL)			
	A	A(1)	B	C
30 Day Geometric Mean	No Limit	200	23	2.2
Maximum Daily Number	No Limit	400	240	23
Minimum Buffer Zone (ft)	800	400	100	0

- Category A – Pasture or other agricultural purposes except growing crops for human consumption, where public access to the site is prohibited.
- Category A (1) – Same as A. The higher quality allows for a smaller buffer zone.
- Category B – Golf courses, cemeteries, greenbelts where public access is controlled and human contact with the recycled water does not occur; an impoundment where human activity is prohibited and contact with the recycled water does not occur.
- Category C – Cemetery, park, playground where access is controlled and contact with the recycled water cannot reasonably be expected; impoundments where full body contact with the recycled water cannot reasonably be expected.

6.3.2 Tailwater Operating Agreement

The primary irrigators in California, with the exception of the Bruns, Celio and Ace Hereford ranches, and the secondary irrigators, tailwater users, in Nevada entered in to an agreement with the NDEP to continue the use of tailwater that originated as recycled water from Harvey Place Reservoir. This agreement makes it the responsibility of the water user to properly sign and notify the operational personnel with potential contact and the public of the presence of recycled water use.

Furthermore, the agreement mandates a water quality sampling program. The District is not a direct party to this agreement but is involved insofar as providing water quality sampling collection and analysis. Direct parties to this agreement are the primary California irrigators and those land owners that have traditionally benefited from a mixed recycled water tailwater inflow from California.

This agreement was entered in June of 2003 and is administered and enforced by NDEP.

6.4 Anticipated Permitting Requirements

The following discussion provides an overview of some of the potential environmental permitting issues that apply to projects of the Master Plan. Additional issues may be identified as each option is further evaluated.

6.4.1 NEPA Documentation

The projects of the Master Plan may be at least partially located on lands under the jurisdiction of the Bureau of Land Management and the U.S. Forest Service. The National Environmental Policy Act (NEPA) requires federal agencies to conduct environmental review before undertaking any federal action that could affect the environment, including the use of federally managed lands.

Use of this property requires approval of federal agencies. Environmental requirements under NEPA may be met by completion of an Environmental Assessment or Environmental Impact Statement. Any project implemented is subject to NEPA requirements and evaluated with environmental documentation.

6.4.2 The California Environmental Quality Act (CEQA)

The proposed Master Plan projects are subject to the requirements of The California Environmental Quality Act (CEQA). CEQA defines a "project" as an activity where the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect change in the environment.

Title 14, Article 18, Statutory Exemptions, Section 15262, of CEQA states that "a project involving the feasibility of planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR or Negative Declaration but does require consideration of environmental factors. This section does not apply to the adoption of a plan that will have a legally binding effect on later activities."

Once a strategy and/or alternative has been recommended, the strategy and/or alternative is subject to review to determine if the activity is ministerial, has no possible significant effect, is statutory exempt, or is eligible for a categorical exemption. If the activity is not exempt, then the activity is reviewed for any significant effects on the environment. If there are no significant effects on the environment, the activity may be eligible for a Negative Declaration. If significant effects are found, the activity is subject to an EIR under the CEQA regulations.

6.4.3 Endangered Species Act

The U.S. Fish and Wildlife Service (FWS) administers the Endangered Species Act (ESA). Plants and animals listed as threatened or endangered are protected, as is their habitat. The FWS must be contacted regarding potential impacts to habitat and protected species pursuant to Section 7 of the Endangered Species Act. A permit may be required if it is determined that the project could impact a protected species or its habitat.

6.4.4 Section 401 of the Clean Water Act

The California Lahontan Regional Water Quality Control Board and the NDEP administer the 401 Water Quality certification program in their respective states. A 401 certification is required when a proposed activity requires a Corps 404 permit. The 401 Water Quality Certification is a standard permit requisite for all construction projects. The 401 certification generally requires

best management practices to be implemented during construction to minimize water quality impacts.

6.4.5 Section 402 of the Clean Water Act

The Lahontan Regional Water Quality Control Board and the NDEP also administer Section 402 of the Clean Water Act in their respective states. Section 402 requires adherence to National Pollutant Discharge Elimination System (NPDES) regulations for storm water runoff as well as permanent surface water point discharges. Activities disturbing more than one acre of area require the filing of a Notice of Intent, the preparation of a Stormwater Pollution Prevention Plan and, upon completion of the project, the filing of a notice of termination.

6.4.6 National Historic Preservation Act

Cultural resources are objects, sites, structures, buildings, or areas of architectural, archaeological, cultural, or scientific significance. These resources receive federal protection under Section 106 of the National Historic Preservation Act (NHPA) (36 CFR 800). Traditional Cultural Properties, which are areas that have been used for medicinal, ceremonial, or religious purposes and which may or may not be associated with specific artifacts, are also covered under the NHPA.