

Section 10: Recycled Water Management Projects

The District should develop and adopt a series of revised management and operation techniques to meet the objectives of recycled water management. The recycled water management projects have been separated from the infrastructure projects for clarity in understanding of the scope of the projects and how they integrate with the infrastructure projects. Although some administrative and operational costs may be entailed by the implementation of some of these management projects, itemized cost estimates were not developed for these projects.

There are a total of three recycled water management projects. Two of these are recommended for implementation in the near future. The implementation of the third project is contingent on the need for additional recycled water irrigation land.

10.1 Project No. 11 - Prepare Nutrient Management Plans

This project addresses the purpose and need statement:

- PN-3. Potential exists for nitrate accumulation in groundwater with unregulated recycled water application rates.

The recycled water application rate is founded upon a database containing irrigated lands, soil types, crop type and topographical and environmental data. The ultimate goal of California's Recycled Water Policy, currently under development, is to provide an incentive for development of salt (including nutrient) management plans by recycled water dischargers in groundwater basins that are threatened by salts. The intent of the Water Board in developing salt management plans is to assist irrigators in developing the irrigation requirements to meet crop demand, understand nitrogen limits, and protect groundwater by not exceeding the permeability limits. Application rates are discussed in greater detail in Appendix K.

Project No. 11 of the Master Plan, Prepare Nutrient Management Plans, is recommended to be implemented because it will establish the appropriate recycled water application rate for each of the contract irrigator ranches. Although the Recycled Water Policy could potentially only require development of a single Nutrient Management Plan (NMP) for the basin, it is in the District's best interest to assist in preparation of the NMPs in coordination with each contract irrigator and educate the contract irrigators of the requirements of the NMP. The NMP recycled water irrigation application rate information can be used to modify the "effluent contract" for each contract irrigator and in turn, each contract irrigator's Lahontan Regional Water Quality Control Board permit for application of recycled water.

10.2 Project No. 12 - Permitting for Recycled Water Use in Diamond Valley

This project addresses the purpose and need statements:

- PN-1. Inadequate land may be available to apply future recycled water flows.
- PN-2. Residential development is encroaching on agricultural land, reducing land available for recycled water irrigation.
- PN-4. Existing recycled water application contracts with contract irrigators will expire in 2028.

The Diamond Valley has not been irrigated with recycled water for several decades. Currently no land in Diamond Valley is permitted to receive recycled water. In the future several portions of Diamond Valley need to be permitted to apply recycled water for irrigation or emergency disposal.

The Irrigation Fields should be permitted to receive recycled water both as irrigation application and as a recycled water emergency impoundment. This may demand a more developed groundwater monitoring system to detect nitrogen in the shallow groundwater during episodes of impounded water.

A permit application must be made with the Lahontan Regional Water Quality Control Board for the irrigation of lands within Diamond Valley and for the emergency disposal of recycled water.

It is recommended the District commence securing a permit from the Lahontan Regional Water Quality Control Board for irrigating the Diamond Valley Ranch with recycled water. Project No. 12, Permitting for Recycled Water Use in Diamond Valley, should be implemented because it will allow the District to apply recycled water on the Diamond Valley Ranch if lands currently irrigated with recycled water are lost to subdivision or some other reason.

10.3 Project No. 13 - Make Recycled Water Available to Irrigators in Nevada

This project addresses the purpose and need statements:

- PN-1. Inadequate land may be available to apply future recycled water flows.
- PN-2. Residential development is encroaching on agricultural land, reducing land available for recycled water irrigation.
- PN-4. Existing recycled water application contracts with contract irrigators will expire in 2028.

The concept of making recycled water available to irrigators in Nevada is a contingent project. Implementation could be triggered by the District's need for additional lands for irrigation with recycled water in the event existing lands within Alpine County currently irrigated with recycled water are lost by subdivision or some other reason. Economics is another possible trigger for this project.

Nevada irrigators downstream of Alpine County currently do not have access to sufficient volumes of water to divert to irrigation in an average or below average precipitation year. Because of a lack of reliable freshwater sources, Nevada irrigators perceive recycled water as a desired commodity. Currently the District's recycled water is not permitted for direct land application in Nevada with the exception of tailwater agreements the three contract irrigators, with land adjacent to the state line, have with the Nevada Division of Environmental Protection (NDEP). This project would pursue the permitting of land in Nevada by NDEP to receive recycled water from Harvey Place Reservoir for the purpose of irrigating.

An initial step to implementation of this project could be the permitting of lands in Nevada currently owned by existing contract irrigators. This would result in additional lands for irrigating with recycled water. This and other irrigation in Nevada with the District's recycled water would also have to be permitted by the Lahontan Regional Water Quality Control Board.

Existing ditch systems (Diamond Ditch and Fredericksburg Ditch) are in place to deliver recycled water to Nevada; however, the District does not own these ditches. Conveyance to Nevada irrigators using these existing ditch systems would require agreement with the Ditch owners for conveyance. Most likely new infrastructure would need to be constructed to deliver recycled water to Nevada irrigators. A potential future project discussed in Section 13 (page 13-96) includes an extension of the C-Line from Woodfords to the State Line. Implementation of this project would construct the infrastructure necessary for conveyance to Nevada. Conveyance and distribution systems would be constructed within Nevada by Nevada irrigators. The value of this water will depend on if it is delivered with sufficient pressure for spray irrigation or not.

One drawback of this pipeline project is that no method is provided for diverting recycled water flows to winter storage in Harvey Place Reservoir. Additional pipe connection infrastructure to the C-Line will be needed for this project alternative.

Permits and approval must be obtained from NDEP and Douglas County, Nevada. Irrigation with recycled water in Nevada will be subject to all recycled water requirements set forth by the Federal EPA and NDEP. Recycled water must be applied in Nevada at a rate that will not result in adverse impacts to groundwater and surface water resources. The state of Nevada requires preparation of an Effluent Management Plan for each use of recycled water in the state to ensure recycled water is used without degrading existing water quality in the state. It will be the responsibility of the Nevada irrigators to ensure compliance with applicable Nevada regulations and the requirements of the Effluent Management Plan.