

Disposal Alternatives

This Section includes an evaluation of the disposal alternatives available to the stakeholders involved in the development of this Amador Regional Wastewater Management Plan. Alternatives have been developed to address the fact that some existing disposal options utilized by various stakeholders may be expanded to meet projected needs while others may be limited or may not be available in the future. This Chapter describes the major options for effluent disposal available in Amador County, which include: reclamation and reuse for irrigating crops and/or landscaping, evaporation, percolation to shallow groundwater, and discharge to surface water. These disposal alternatives were developed initially in Technical Memorandum No. 1, dated February 25, 2005, the complete text of which is included in Appendix E.

8.1 OVERVIEW OF THE IMPACTS OF EFFLUENT DISPOSAL METHODS

Effluent disposal is often the most difficult aspect of wastewater facilities planning. Effluent disposal method governs the number of effluent constituents that will be regulated, and the effluent limitation on each. In general, discharging effluent to a surface water (versus to land in some manner) results in more restrictive regulation of the effluent. Because of this greater regulation, discharging effluent to a surface water inherently involves greater liability, especially considering that there are mandatory fines associated with many violations of surface water discharge limitations. Finally, the levels of effluent regulation and liability associated with the various effluent disposal methods have a strong impact on the nature of, and therefore on the cost of, needed wastewater treatment facilities (and associated pretreatment facilities and sewer use ordinance regulations/enforcement). In general, the cost of wastewater treatment and regulatory monitoring is greater when discharging effluent to surface waters; but the cost of effluent disposal is greater when discharging effluent to land. Finding a cost effective balance between treatment costs, disposal costs, overall reliability, and regulatory compliance is the objective of wastewater facilities planning.

8.1.1 REGULATORY POLICIES RELATED TO EFFLUENT DISPOSAL METHODS

The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) and Department of Health Services (DHS) guidelines prioritize effluent disposal methods from most desirable to least desirable as follows:

- **Reclamation:** true beneficial reuse of effluent by crop irrigation, landscaping irrigation (parks, golf courses, schools and roadways) manufacturing, and some institutional uses.
- **Land Disposal:** Effluent application to the land with there being no direct beneficial reuse of the water. Examples of land disposal include infiltration basins as used at

Ione, application to land for the sole purpose of effluent disposal as done at Gayla Manor, and subsurface application as used at Wildwood Estates.

- **Discharge to Surface Water:** Winter only effluent discharges are favored over year-round or summer discharges. Effluent discharges diluted substantially by the receiving water are favored over effluent discharges that receive little dilution.

General principles influencing effluent disposal planning include:

- Avoid discharging effluent to potable water supplies to the extent feasible.
- Discharge effluent to the extent feasible in a manner that minimizes impacts on people who did not create, or benefit from the creation of the wastewater.
- Disperse effluent disposal to the extent feasible to avoid concentrated impacts on a limited number of surface water and/or groundwater resources.

8.1.2 POTENTIAL EFFLUENT DISPOSAL ALTERNATIVES IN CENTRAL AMADOR COUNTY

Major effluent disposal sites (actual and potential) in the central Amador County area are shown in Figure 8-1 and include:

- Ione Valley: reclamation and land disposal.
- Jackson Valley: reclamation and land disposal.
- Sutter Creek contract ranchers: reclamation.
- Martell business park: reclamation.
- Little Indian Creek area: reclamation and land disposal.
- Ridge Road area: reclamation and land disposal.
- Greater Jackson area: reclamation.
- Greater Sutter Creek area: reclamation.
- Little Indian Creek: very limited winter/spring discharges.
- Sutter Creek: limited winter/spring discharges.
- Jackson Creek: limited winter/spring discharges.
- Mokelumne River: year-round discharges

8.2 BEST APPARENT DISPOSAL METHODS IN CENTRAL AMADOR COUNTY

Considering the foregoing, the best apparent effluent disposal methods for each general area in central Amador County are discussed below as a basis to screen potential regional wastewater treatment and/or disposal options. The disposal methods and areas described below are illustrated in Figure 8-1.

8.2.1 IONE AREA DISPOSAL

Development in the greater Ione area is projected to result in a need to treat and dispose of approximately 4.3 mgd of municipal and State institutional wastewater through a combination of rapid infiltration, golf course irrigation, and crop irrigation overlying the Ione Valley groundwater aquifer. Limited winter/spring discharges to Sutter Creek with specific dilution requirements may be appropriate both economically and environmentally to maximize transport

Figure 8-1
Potential Disposal Sites in Central Amador County

of refractory effluent contaminants out of the valley (and its soils and aquifers) and to the Pacific Ocean with virtually no impact on downstream beneficial uses.

8.2.2 PLYMOUTH AREA DISPOSAL

Development in the greater Plymouth area is projected to result in a need to treat and dispose of approximately 0.77 mgd of municipal wastewater. It appears that disposal of the effluent should be accomplished by a combination of infiltration and crop irrigation west of Plymouth on flatter land adjacent to Little Indian Creek. Very limited effluent discharges to Little Indian Creek in wet winter/spring periods may be appropriate. Effluent quality could be upgraded to tertiary for use on a golf course or other higher, more economically advantageous uses at any time warranted by local development needs and/or water shortages.

8.2.3 AMADOR CITY/SUTTER CREEK/MARTELL AREA DISPOSAL

Development in the greater Amador City/Sutter Creek/Martell area (i.e. the Amador Regional Sanitation Authority (ARSA) service area) is projected to result in a need to treat and dispose of approximately 5.52 mgd of municipal wastewater. The existing ARSA fodder crop irrigation areas (Bowers and Hoskins Ranches), the potential golf course, and other potential effluent irrigation sites probably will not be able to provide the needed effluent disposal capacity. An expanded ARSA area disposal plan could include reclamation in the Martell area, limited winter/spring discharges to Sutter Creek (just downstream of the City of Sutter Creek), and reclamation in Jackson Valley. Disposal of ARSA area effluent in Ione Valley does not appear to be appropriate because of the approximately 4.3 mgd of effluent from the greater Ione area projected to be disposed of in the area overlying the Ione Valley aquifer.

8.2.4 JACKSON AREA DISPOSAL

Development in the greater Jackson area is projected to result in a need to treat and dispose of approximately 2.42 mgd of municipal wastewater. It appears that the Jackson effluent will be disposed of by one of the following means, listed in order of decreasing propriety from an effluent disposal perspective (i.e., considering no other factors):

- Landscape irrigation in the greater Jackson area, and crop irrigation and/or infiltration in Jackson Valley, probably with some limited winter/spring discharges to Jackson Creek complying with DHS guidelines for effluent discharges to potable water supplies.
- Landscape irrigation in the greater Jackson area with limited winter/spring discharges to Jackson Creek and/or the Mokelumne River complying with DHS guidelines for effluent discharges to potable water supplies.
- Limited year-round discharges to Jackson Creek and the Mokelumne River complying with DHS guidelines for effluent discharges to potable water supplies.

8.2.5 RURAL RESIDENTIAL DEVELOPMENT DISPOSAL

Rural residential development in the central Amador County area is projected to result in a need to treat and dispose of approximately 0.2 mgd of primarily domestic wastewater. Amador

County, at a minimum, will require each future rural residential development to provide for its own on-site wastewater treatment and disposal facilities as has been done to date. However, with operation and monitoring costs for small community systems (and potentially individual on-site systems under AB 885) increasing dramatically under current regulatory policies, it may be cost effective for new rural residential developments (and some existing developments) to send some or all of their wastewater to either a central reclamation/infiltration disposal area along Ridge Road, or to Sutter Creek or Martell.

Both reclamation and land disposal of effluent tend to cause some degradation of groundwater quality. Thus, clear written guidance from the Regional Water Quality Control Board (Regional Board) regarding permissible degradation of groundwater needs to be requested in light of the California Water Code, Basin Plan, and Resolution No. 68-16. With written guidance from the Regional Board, the agencies participating in this regional planning effort (Amador Water Agency, the Cities of Ione, Plymouth, Sutter Creek, Amador City, and Jackson, etc) will be able to undertake consistent, meaningful, field investigations of potential effluent reclamation uses, potential effluent reclamation sites, and potential effluent land application areas. Based on those investigations and the community-specific projections of growth and wastewater service capacity needs, it can be determined how much effluent can be reclaimed/land applied and how much effluent will need to be discharged to surface waters. The costs to implement these various effluent disposal methods and each method's associated treatment cost will be a determinant of whether growth planned in Amador County will occur to the extent allowed by the various General Plans.

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