

TAHOE TRUCKEE SANITATION AGENCY WASTEWATER TREATMENT INQUIRY

REASON FOR INVESTIGATION

The 2003-2004 Grand Jury investigated the status of wastewater treatment in unincorporated Nevada County. This year, the Grand Jury investigated the status of wastewater treatment by the Tahoe Truckee Sanitation Agency. Since this agency is in the process of renewing its wastewater discharge permit, the Grand Jury examined the plans, projected costs, funding sources, and estimates of customer rate increases to meet the current wastewater discharge requirements.

BACKGROUND

The U.S. Environmental Protection Agency (EPA), State Water Quality Resource Control Board (SWB), and the Lahontan Regional Water Quality Resource Control Board (LRB) regulate wastewater treatment plants.

Treatment plants, regulated by multiple levels of governmental authority, operate within a complex regulatory framework that includes the following:

- EPA as regulator of the Clean Water Act (CWA), 33 USC 1311, and the Federal Water Pollution Control Act, 33 USC et seq.
- The SWB and the Porter-Cologne Water Quality Control Act, California Water Code Division 7, effective January 1, 2003, sometimes called the “California Toxics Rule” (CTR).
- The LRB which affects portions of Lake Tahoe, the Town of Truckee and the surrounding area.

Environmental Protection Agency

The EPA’s mission is to protect human health and to safeguard the natural environment. The Clean Water Act (CWA) of 1972 and amended in 1987 is the primary Federal statute regulating the protection of the nation’s waters.

State Water Quality Resources Control Board

The California Water Code is the principal state regulation governing water quality protection and the use of water resources. This code established the SWB and the California Regional Water Quality Control Boards.

Regional Water Quality Control Boards

The mission of the nine Regional Water Quality Control Boards is to develop rules to enforce water quality and thereby protect the State’s waters. The primary duty of the LRB is to protect the quality of the waters within the Lahontan region, which includes the Town of

Truckee, portions of Lake Tahoe, and Martis Valley.

All wastewater treatment plants that discharge to surface waters are issued a National Pollutant Discharge Elimination System (NPDES) permit that sets specific discharge requirements to ensure protection of public health and water quality. These permits are renewed every five years by the California Regional Water Quality Control Boards. At each renewal, the permit renewal process may incorporate new treatment objectives and discharge regulations that might require upgrades or modifications to the treatment plants.

The Regional Water Quality Control Board conducts a site survey at each wastewater treatment location and makes a determination of the beneficial uses of the receiving waters, i.e., surface waters that receive the treated effluent. Beneficial uses include municipal and domestic water supplies, water contact and non-contact recreation, warm and cold freshwater habitats and wildlife habitat, ground water recharge, and agricultural supply. NPDES permit requirements are then tailored to preserve and maintain the beneficial uses of the applicable receiving water. Civil and criminal penalties apply to persons or agencies that violate orders set forth by the LRB.

TAHOE TRUCKEE SANITATION AGENCY

The Tahoe Truckee Sanitation Agency (TTSA) was formed in May 1, 1972 as a Special District to provide sewage treatment for five collection districts. The five entities involved are the Tahoe City Public Utility District, the North Tahoe Public Utility District, the Squaw Valley County Water District, the Alpine Springs County Water District and the Truckee Sanitary District. The TTSA wastewater treatment plant is physically located East of the Town of Truckee, within the Town limits. The TTSA is governed by a Board of Directors consisting of one appointee from each of the five collection districts.

The wastewater collection infrastructure within the five collection districts serves a population of over 79,000 and includes 487 miles of collection pipelines.

The existing wastewater treatment facility provides advanced waste treatment (also called tertiary treatment). This treatment process consists of wastewater screening, grit removal, sedimentation, activated sludge, biological phosphorous removal, chemical treatment, filtration, ion exchange ammonia removal, and final chlorination. Organic sludge is dewatered and transported to a landfill.

Even with the high degree of treatment, a direct discharge to the Truckee River is prohibited. Instead the plant's effluent is routed through a leach field, which provides additional treatment as the flow percolates through the soil prior to contact with the Truckee River.

On January 10, 2002, the TTSA submitted a Report of Waste Discharge for the expansion of the existing Wastewater Treatment Plant. On May 9, 2002, the LRB issued Board Order No. R6T-2002-0030, which contained the new wastewater discharge requirements.

METHOD OF INVESTIGATION

The Grand Jury interviewed wastewater operations management, a member of the TTSA Board of directors, reviewed documents prepared by the LRB, visited the wastewater treatment site, reviewed documents prepared by consultants, and researched the topic of wastewater in California through multiple sources.

Additional information regarding the TTSA was obtained from the *Final Eastern Nevada County Wastewater Municipal Service Review Nevada County LAFCO*, November 26, 2003 (prepared by Quad Knopf, Inc).

FINDINGS

1. TTSA is currently capable of transporting, treating, and disposing of a maximum 7-day average municipal wastewater flow, during summer months, of 7.4 million gallons per day (mgd).
2. The Board Order has revised previous waste discharge requirements to permit an increase in wastewater treatment capacity and a change in treatment methods for nitrogen removal, and to modify the monitoring and reporting program in response to these changes. Key requirements include decreasing the total load of nitrogen, dissolved solids, and chlorides discharged into the Truckee River.
3. To meet the new wastewater discharge requirements, the TTSA facility will be expanded to include numerous replacement, upgraded, modified and additional components and units to provide additional capacity and improve treatment. The expansion will provide the capability to transport, treat and dispose of a maximum 7-day average flow during summer months of 9.6 mgd.
4. The expansion will replace the existing ion-exchange nitrogen removal system with a more advanced Biological Nitrogen Removal system for the full 9.6 mgd capacity.
5. The expansion will also incorporate enlargement of and improvements to the Truckee River Interceptor¹.
6. The wastewater treatment plant expansion and upgrades are expected to cost between \$65 - \$75 million and will be funded using a combination of TTSA reserves, a \$53 million State Revolving Fund Loan, and an \$11.6 million grant from the Department of Water Resources.
7. The Construction Milestone Schedule is shown in the following table. TTSA indicates construction is on schedule.

¹ The Truckee River Interceptor is a 17-mile collection pipeline that runs from Tahoe City to the TTSA Treatment Plant.

Task	Date
Notice of Award	November 19, 2003
Notice to Proceed	December 10, 2003
Substantial Completion	
• BNR Superstructure	May 1, 2004
• 365 Day Milestone Solids Handling Bldg - 1st new system, Digester, Stripper Basin	December 9, 2004
• 455 Day Milestone Solids Handling Bldg - 2nd new system	March 9, 2005
• 730 Day Milestone Operation of BNR system & Solid Dewatering Facility	December 9, 2005
• 912 Day Milestone Mainstream Process Improvements	June 9, 2006
Final Completion	
• 1,000 Day Milestone	September 5, 2006

Construction Milestone Schedule provided by TTSA.
Each milestone event identifies a list of construction tasks.

8. TTSA does not anticipate an increase in service charge rates because of the wastewater treatment plant expansion. Correspondence from TTSA indicates about one-third of the expansion will serve current users by means of improvements to the current facility. TTSA breaks down the processes that serve current users and those which serve only future users. Reserves funded by service charges and taxes are used to pay for portions of the construction project that are only upgrades to the current facility benefiting current users. Reserves funded by connection charges are used to pay for the portion of the construction project that increase the capacity of the plant and benefit new development.
9. The current residential service charge rate is \$18.00 per month, compared to a residential service rate of \$20.07 in areas where TTSA does not receive property tax. The connection fee for a residential living unit is \$5,000 in both taxed and non-taxed areas.
10. TSA has the authority to perform wastewater collection services in addition to wastewater treatment. Although member agencies currently perform wastewater collection services, these agencies provide the service at different cost and efficiency levels.
11. TTSA does not have a Master Plan. Instead, TTSA reviews its capital improvement needs on an annual basis and adopts a revised 5-year capital improvement budget annually.
12. The Local Area Formation Commission (LAFCO) report provides the following

information regarding TTSA treatment plant expansion and current operational issues:

- a. “TTSA planned capacity will be fully maximized at a summer population of 143,000 during the summer months and 148,000 during the winter months around the year 2015. These figures are based on probable development in the Martis Valley, the Town of Truckee and North Lake Tahoe based on the General Plans currently in place.
- b. There is no regional approach to managing growth and resolving land use planning issues between jurisdictions in the study area. TTSA was established principally to process sewage and serve member jurisdictions. Wastewater treatment is provided on a first-come first-served basis. As development occurs within a given member agency’s boundaries, capacity that could otherwise be used by other member agencies is reduced.
- c. While TTSA is taking steps to reduce Inflow and Infiltration² on its Truckee River Interceptor, there appears to be no consistent program throughout the member agencies to reduce Inflow and Infiltration, and little incentive collectively to member agencies to address the problem comprehensively. While some agencies have active Inflow and Infiltration reduction programs, others do not.”

CONCLUSIONS

1. TTSA has developed a plan to finance the expansion of the wastewater treatment plant, and enlarge and improve the Truckee River Interceptor. TTSA appears adequately funded and has addressed infrastructure problems through systematic maintenance programs.
2. The Grand Jury concurs with the LAFCO report which also states:
 - a. “Additional wastewater treatment planning is required for the period beyond 2015. Upon completion of current Town of Truckee General Plan Update and the Martis Valley Community Plan Update, a master plan for TTSA needs to be developed to reflect the revised plans and growth trends beyond 2015. This needs to be a cooperative effort between the TTSA member agencies.
 - b. Having one agency perform collection services could result in an overall reduced cost of providing collection services, with centralized maintenance and administration. Administrative costs could be spread over the entire system, were TTSA to perform the service. A centralized billing system could allocate costs based on zones of benefit and efficiencies in maintenance personnel could also potentially be realized.”

² Inflow and infiltration occur when storm water and seasonal runoff flow into the wastewater collection pipelines.

1. TTSA and its member agencies, and other agencies such as the Town of Truckee, could explore potential efficiencies that may be achieved through shared facilities and other cost-sharing arrangements. Ideas that could be explored include shared corporation yards and equipment, and shared office space. Additional savings may be achieved through such methods as employee benefit pools.
2. Unwanted water from inflow and infiltration produces greater than desired flow volumes, resulting in excessive demand on the collection system, higher energy usage and less than optimum efficiency. Reduction of inflow and infiltration will extend the life of the wastewater treatment plant and reduce the potential for water quality violations.
3. It bears repeating that NPDES permits are renewed every five years. At each renewal, LRB Board Orders may incorporate additional treatment objectives and more stringent wastewater discharge regulations that could require upgrades or modifications to the TTSA treatment plant.

RECOMMENDATIONS

1. The Tahoe Truckee Sanitation Agency (TTSA) Board of Directors should take a leadership role in developing a comprehensive document for planning purposes, i.e., Master Plan, for projecting wastewater flows to prepare for the next treatment plant expansion.
2. The TTSA Board of Directors should consider ways to merge or consolidate TTSA wastewater treatment with the collection activities of its member agencies and other agencies such as the Town of Truckee.
3. The TTSA Board of Directors should develop an inflow and infiltration plan and involve its member agencies in addressing the problems of unwanted inflow and infiltration into the wastewater collection infrastructure.
4. The TTSA Board of Directors should maintain a dialog with the LRB in order to become proactive regarding changes to wastewater discharge requirements and become a part of the process to set future discharge requirements.

REQUIRED RESPONSES

Tahoe Truckee Sanitation Agency Board of Directors

September 19, 2005



TAHOE-TRUCKEE SANITATION AGENCY

A Public Agency
13720 Joerger Drive
TRUCKEE, CALIFORNIA 96161
(530) 587-2525 • FAX (530) 587-5840

Directors
O.R. Butterfield
Dale Cox
Erik Henrikson
S. Lane Lewis
Jon Northrop
General Manager
Craig F. Woods

14 September 2005

Honorable Ersel L. Edwards
Presiding Judge of the Nevada County Superior Court
201 Church Street
Nevada City, CA 95959

RE: Response to the 2003-2004 Grand Jury Report Concerning the
Tahoe-Truckee Sanitation Agency

RECEIVED SEP 20 2005

JLD 9-21-05

10/5/05 9-21-05

Dear Judge Edwards:

The following is our response to the Grand Jury's findings:

- 1) Agree with finding.
- 2) Agree with finding.
- 3) Agree with finding.
- 4) Agree with finding.
- 5) Partially agree with finding. The enlargement of and improvements to the Truckee River Interceptor are planned to be designed and constructed in Phase I of the plant improvements. Improvements to emergency storage facilities at the former Truckee Sanitary District sewage treatment lagoons are also planned. No specific time schedule has been chosen for these improvements.
- 6) Agree with finding.
- 7) Agree with finding.
- 8) Agree with finding.
- 9) Agree with finding.
- 10) Agree with finding.
- 11) Agree with finding.
- 12) Agree that the referenced statements were made in the LAFCO report.

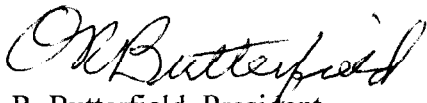
14 September 2005
Honorable Ersel L. Edwards
Presiding Judge of the Nevada County Superior Court
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The following is our response to the Grand Jury's recommendations:

- 1) The Plant expansion that is currently underway and expected to be completed by 2007 will address wastewater treatment and disposal needs in T-TSA's service area through 2015. The Board of Directors at least annually reviews the wastewater treatment and disposal demands and requirements within the T-TSA service area. T-TSA will take the lead on and develop a plan to address the next treatment plant expansion well before it is needed which is projected to be around 2015.
- 2) The recommendation does not appear appropriate. The matter has been reviewed to some degree, but it has not been demonstrated that the suggested consolidation would be more efficient than existing operations or save money. This is due in part to the nature of the collection systems of the member entities.
- 3) The recommendation has been and is being implemented. Over the last 15 years, the Agency has performed various infiltration and inflow studies for the service areas of all the member entities and prioritized areas for improvements. Periodic reviews of infiltration and inflow in the service areas are performed and are shared with the member entities. The ultimate responsibility for infiltration and inflow control remains with the individual member entities.
- 4) The recommendation has been and is being implemented. The Board of Directors, through Agency staff, maintains an on-going dialog with the Lahontan Regional Water Quality Control Board and its staff. The Agency has established this rapport through numerous reports on Agency performance, periodic meetings and inspections, periodic attendance at Regional Board meetings, and review of the Basin Plan and proposed amendments thereto.

If you have any further questions, please do not hesitate to contact me.

Sincerely,



O. R. Butterfield, President
Board of Directors

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